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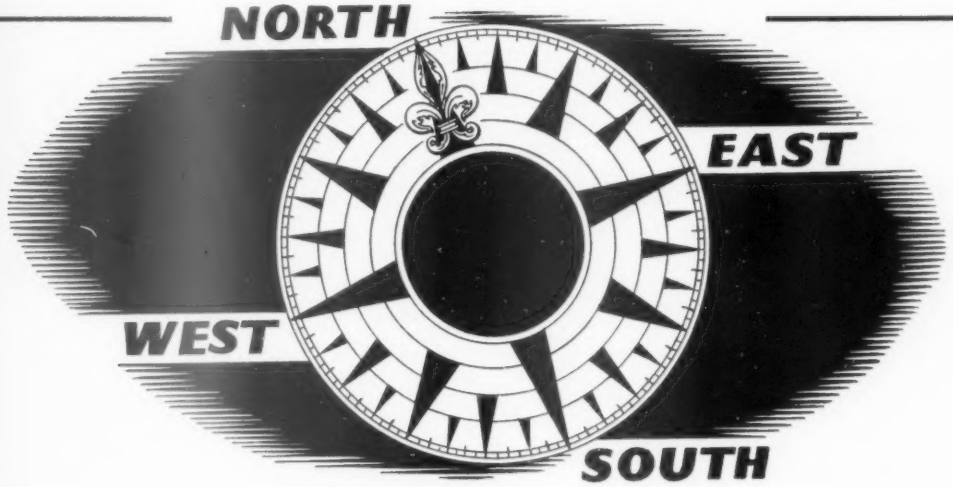

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More Diesel Locomotives for British Railways

THE total number of diesel locomotives ordered by the British Transport Commission for main-line duties in connection with British Railways modernisation programme is now more than 1,000. Some 160 of the locomotives are already in service, and it is expected that there will be nearly 500 by the end of this year. It is a declared policy of the B.T.C. that diesel locomotives be introduced in areas in which steam power is to be replaced entirely, so that the advantages of diesel traction can be exploited to the full. In pursuance of this line the Commission has placed contracts for a further 130 main-line diesel-electric locomotives in two horsepower classes, further details of which are recorded in our Contracts and Tenders columns. Contracts have also been placed for power units for diesel shunting locomotives. Of the 130 main-line diesel locomotives, 55 2,000-h.p. Type "4" locomotives are to be built by the English Electric Co. Ltd., and 75 1,365-h.p. Type "2" locomotives by the Brush Electrical Engineering Co. Ltd. Both types, although varying in hauling capacity, will have a maximum speed of 90 m.p.h. They will be allocated on delivery, beginning in December this year and continuing until the end of 1960. Similar locomotives are already in service on British Railways, those of 2,000-h.p. hauling, among others, named trains such as "The Flying Scotsman" and "The Master Cutler." The 1,365-h.p. locomotives are employed on passenger services between Liverpool Street—Cambridge, Kings Lynn, and Ipswich, on the Great Eastern line of the Eastern Region, and on freight trains between Stratford, Whitemoor, and the London, Tilbury, & Southend Line. All the 130 main-line diesel locomotives will have electric transmission, in which the diesel engine is coupled to an electric generator to supply power for the electric traction motors driving the axles. In general, the design of the Type "4" locomotive follows the tradition of the English Electric Co. Ltd., which has been evolved over a long period, as a result of considerable operating experience with its products in various parts of the world. The Type "2" locomotives follow the design of the series of 60 now being delivered to the Great Eastern Line except that all will be geared for a maximum of 90 m.p.h. Those now being delivered are geared for 75 m.p.h. with some at the higher gearing to follow later this year.

New Chairmanships for Sir John Elliot

THE appointment of Sir John Elliot as Chairman of Thos. Cook & Son Ltd., and of the Pullman Car Co. Ltd., comes as no surprise. Indeed, as we stated editorially when his decision to retire from the Chairmanship of London Transport was announced, something of the kind was to be expected. Ideally suited to his new position, Sir John Elliot combines practical knowledge of transport with a deep understanding of the human element, and his interest in the Continent in general and in France in particular is well known. His early grounding in press and public relations work also will be of the greatest value in his new capacity as Chairman of these undertakings, both of which are owned by the British Transport Commission. Mr. Stanley Adams, who retires after 21 years of service with Cook's, has seen the organisation greatly develop. With justification, he can feel he is handing over control of a sound and going concern. Mr. Charles Holt, who has been Director & General Manager, is appointed to the new office of Managing Director.

B.T.C. Revised Season Ticket Fares Proposals

THE Transport Tribunal, in rejecting the draft British Transport Commission Passenger Charges Scheme, as a whole, asked the Commission to supply a scale of maximum season ticket rates so that the difference between those now in force and those proposed should be reduced by half. The Commission earlier this week submitted its revised proposals. There is now an interval of three weeks to allow any fresh objections to be made, after which the Tribunal will decide whether to re-open the public inquiry. If the proposed new maxima are accepted promptly, the Commission will be empowered to increase ordinary and season ticket rates about the end of June. Examples of the revised proposals are given on another page. The Commission, in submitting the Charges Scheme, had based its demands on the minimum potential takings consistent with making reasonable additions to its receipts in the light of its financial situation. Rejection of its original proposals for season ticket rates, even although they were maxima, may mean that a great deal more revenue must be found from other sources.

The C.P.R. and the Seaway

IN his Presidential address, at the recent Canadian Pacific Railway Company meeting, Mr. N. R. Crump warned the shareholders of the inevitable adverse effects of the opening of the St. Lawrence Seaway on C.P.R. revenues. These are estimated as losses of 2,000,000 tons of freight valued at nearly $40,000,000. In course of time there would no doubt be some amelioration in the form of additional traffic accruing from industrial development in the area served by the Seaway. This may seem cold comfort, but in view of the fact that in 1958, without the encouragement of the Seaway, nearly 600 new businesses were established on C.N.R. routes requiring no fewer than 31 miles in aggregate of private sidings—151 in number—to serve them, the prospects of traffic developments in future may not be so negligible as they would appear at

first sight. There are many other directions in which general development and growth of population are likely to affect the railways favourably in the St. Lawrence basin and in their trunk routes. Mr. Crump also referred to the losses incurred by his railway due to the freight-rate freeze, and to its past and future expenditure upon improvements averaging $850,000,000 in the last and next ten-year periods. If the country's transport needs were to be met, the whole policy of the industry must be brought up to date forthwith.

Regional Re-organisation of C.P.R.

CREATION of a fourth Region, the Atlantic, embracing lines in the province of Quebec and the Maritimes, and adjustment of the boundaries of the existing Eastern, Prairie and Pacific Regions are the main features of the re-organisation of territorial administration on the Canadian Pacific Railway to take place on July 1. Some details are given elsewhere in this issue. The present Eastern Region, with headquarters in Toronto, includes most of Ontario, the province of Quebec, and the Maritimes. Its division into two less unwieldy areas will afford closer contact between Regional managements and lower levels in the C.P.R. organisation, and between the railway traffic departments and business and industry in areas of Eastern Canada which are developing fast. The Atlantic, Eastern and Pacific Regional managements will be responsible for sea, lake, and river shipping services operated by the C.P.R. in their respective areas. The four Regions, which will be very largely self-contained, will each be under the direction of a Vice-President reporting to System Headquarters in Montreal.

Overseas Railway Traffics

OPERATING revenues of the Canadian National Railways for the month of March amounted to $62,658,000. Expenses, taxes, and rents totalled $61,396,000, resulting in a net operating income for the month of $1,262,000. In March 1958, operating revenues were $55,784,000; expenses, taxes, and rents were $59,898,000, and the net operating income deficiency was $4,114,000. Aggregate net operating income for the three months January-March showed a deficiency of $7,485,000. This was an improvement of $7,950,000 compared with the corresponding period of 1958. Canadian Pacific Railway revenue for March amounted to $43,110,244 compared with $41,753,650 in March 1958. Railway expenses were $37,971,408 ($36,639,865) resulting in net earnings of $5,138,836 ($5,113,785). Aggregate net earnings for the three months January-March were $6,166,013 ($6,074,625). Railway operating revenues of the International Railways of Central America for March amounted to $1,351,734, compared with $1,416,890 in March 1958, a decrease of $65,156. The net revenue from railway operations was a loss of $5,281 ($155,541 profit) and the net income a loss of $45,971 ($50,478 profit). Figures received from the Midland Railway Company of Western Australia Limited show that estimated railway and road service receipts in February amounted to £A70,985 compared with £A67,916 in February, 1958.

Necessary Preliminary to Electrification

AS a pre-requisite to the electrification of British Railways, Southern Region, Kent Coast lines from Gillingham to Ramsgate and to Dover via Faversham, and of the Sheppey branch, the whole of the extremely complicated system of junctions between Bickley, Chislehurst, St. Mary Cray, and Petts Wood has been re-designed. The new network of lines between Bickley Junction and Swanley, and the rearranged tracks between Shortlands and Bickley will be brought into use on May 30, and however carefully the operation is planned it is inevitable that this, the biggest single engineering job before the actual inauguration of the newly electrified lines, will cause widespread cancellation of train services, and slow running and delays for several days afterwards. From 10 a.m. on Saturday, May 30, to 4 a.m. on the following Monday, no trains will run between St. Mary Cray and Swanley, and from midnight on the Saturday to 4 a.m. Monday, there will be no trains between Shortlands and Bickley. During the whole of this time, Kent Coast main line and Victoria-Gillingham trains will run via the Dartford Loop or Bexleyheath lines. Even when the new electric services are inaugurated on June 15, there are bound to be teething troubles for some weeks, but thereafter passengers will be confident of enjoying regular and punctual service between London and North-east Kent.

Trans-Siberian Route to the Far East

THE accordance of through booking facilities between Britain and the Far East via Moscow and the Trans-Siberian Railway, announced last week, offers possibilities of journeys of the utmost interest. The comfort of the trains today is reported to be superior to that of the Trans-Siberian expresses by which Western Europeans were allowed to travel for a few years before the outbreak of war in 1939. It is almost certainly inferior to that of the best expresses before 1914, especially the *trains-de-luxe* from and to St. Petersburg, composed of Wagons-Lits Company's stock. Accommodation today is hard to obtain. Nor is the journey much quicker than nearly 50 years ago. On the other hand, as electrification of the Trans-Siberian progresses, and, possibly, with diesel haulage on sections not electrified, there may well be reductions in schedules which will make the train journey an attractive alternative to the sea voyage via the Suez Canal.

New Indus Bridge at Sukkur

THE new bridge to convey the Karachi-Rohri-Quetta line of the North Western Railway of Pakistan over the Rohri Channel of the Indus at Sukkur will be a steel trussed arch with a span of 807 ft. and a total height of 204 ft. The designer is Dr. D. B. Steinman, of New York. The original proposal for a multiple-span structure had to be abandoned mainly, it is stated, because the piers might disturb the flow of the river and endanger flood protection works at Rohri and Sukkur. The new bridge is designed for a 22½-ton axleload for a single 5-ft. 6-in. gauge track. Concrete decking on the floor will be available for heavy road vehicles in an emergency. Tenders have been invited, as recorded on our Contracts and Tenders page, and completion is scheduled for mid-1961. The existing Lansdowne Bridge has developed defects which necessitate severe restrictions on the weight of locomotives and speed of trains, resulting in traffic congestion.

Widening at Potters Bar

THE elimination of the two-track 2½-mile bottleneck between Greenwood and Potters Bar on the East Coast main line, British Railways, Eastern Region, was proposed in the latter part of last century by the then Great Northern Railway, but it was not carried out because of the construction of the Hertford loop line from Enfield to Stevenage, which provides an alternative, though slightly longer, route to the North from King's Cross. Work was started in 1955 with the duplication of three double-line tunnels, Hadley North, Hadley South, and Potters Bar, and the four-track section was officially inaugurated last Wednesday when Sir Brian Robertson, Chairman of the British Transport Commission, unveiled a commemorative plaque on the down platform at Hadley Wood Station. This was the first major railway tunnel work of its kind since the mile-long Ponsbourne tunnel was constructed on the Hertford loop line over 40 years ago. Since then new tunnelling techniques have been evolved, and the design of the new tunnels, put forward by the consulting engineers, Sir William Halcrow & Partners, is believed to be the first of its kind executed anywhere.

Pruning L.M. Region Passenger Services

THE proposals for closing, during the current year, certain unremunerative branch lines and stations and withdrawal of passenger services in British Railways, London Midland Region, will not, if implemented, cause any serious hardship to railway users. They are listed on another page. Like the recently announced L.M. Region plans to rationalise goods services, they are part of a long-term project to increase efficiency and reliability and add to net revenue. In the case of passenger services, pruning of what is unremunerative will be associated with improvement of other services by introduction of diesel multiple-unit trains and railcars and, eventually, electrification of the Euston to Manchester, Liverpool, and Birmingham main lines and some additional suburban

lines. The plans have already been discussed with the trade unions concerned and during the course of the year each individual proposal will be submitted to the appropriate Transport Users' Consultative Committee. The most drastic is that to withdraw the through expresses between Marylebone and Sheffield, Bradford, and Manchester, and to provide a reduced service between Marylebone and Nottingham only, though ample services will be provided on other routes serving these places.

Summer Services in Holland

THE new summer timetable of the Netherlands Railways has slightly wider pages than before, enabling the thickness to be reduced appreciably while displaying the information to better advantage. The main through services, hitherto given in a separate publication, are now included and indicated in red on the map, with information concerning restaurant and similar facilities. Certain inland services have been extended over the frontiers, giving better communication with Hanover and Münster, with improved connections in Holland itself. Customs examinations on the trains now result in a reduced journey time of about an hour between the principal western cities and the port of Bremen, while abolition of frontier control on Dutch territory enables passengers to enter and leave certain Benelux trains at Rosendaal. From most parts of the Netherlands it is now possible to leave up to as much as an hour later than formerly and still be certain of catching the last trains into Maastricht and Heerlen. Improved connections also have been provided between the Hook and the northern provinces and indeed almost everywhere the services have been speeded up or made to connect more easily.

Sydney-Melbourne Through Passenger Trains

THE 4-ft. 8½-in. gauge line between Wodonga, on the New South Wales border, and Melbourne is expected to be completed in 1961. Elimination of transhipment between the Victorian Railways 5-ft. 3-in., and New South Wales Government Railways standard gauge, lines will afford quicker transits between Melbourne and Sydney. A daily, through passenger service is planned of one day train, including a buffet car, and one sleeping car train. To provide the four train sets to maintain this service, 44 all-steel air-conditioned vehicles, including the sleeping cars, are considered necessary. These would be owned jointly by the two State railways. Delay is reported in placing orders for this stock, as both State Governments had hoped for financial help from the Commonwealth Government. The latter is reported to consider the provision of rolling stock to be a matter for the two States, as the Commonwealth is bearing most of the cost of gauge standardisation. It is not proposed to convert Victorian Railways locomotives to standard gauge. Additional diesel-electric locomotives are to be acquired to work through between the two capitals. The journey times for passenger trains over the 589 miles are expected to be 12½ hr., compared with 14½ hr. at present.

A Long and Sad Tale

"IT *is* a long tail, certainly," said we—like Alice—looking down in wonder at the mouse's tail ; " but why do you call it sad ? " " Because," said Mr. Terence Cuneo, " you described my mouse as a rat in your caption." We could see that we had. We were looking at the " Scrap Heap " in our May 8 issue, where we had shown the latest of Mr. Cuneo's many fine railway posters. " For some time now," the artist went on, " I have included a mouse in each of my paintings. It began when I admired the carvings of Mr. Robert Thompson, the Yorkshire wood craftsman. He incorporates this rodent in all his work. I should have thought that you, of all people, would have known about my mouse. Other people do. My daughter tells me she was at one of my exhibitions recently and heard a man say to his friend: ' You take this wall, and I'll take the other. And we'll see how many of these blasted mice we can find'." We must admit our inadequacy on this occasion. We offer our apologies to Mr. Cuneo and are looking forward to conducting our own research at his next one-man exhibition. This, organised by John Laing & Co. Ltd., will take place at the Tea Centre, Regent Street, London, from June 30 to July 11.

Railway Manufacturing Activities

THE long-awaited statement by the British Transport Commission on its workshop policy was issued towards the end of last week. It destroyed any hopes which had been entertained by manufacturers of railway equipment that it would indicate a change in the practice adhered to by the railways over a very great number of years. In effect, the statement reiterates the main lines of policy which were announced in February, 1956.

In formulating its future policy, the Commission states that it has felt bound to give overriding consideration to the interests of the railway industry itself; to have regard to the future of its own employees; to seek the maximum economy and efficiency in manufacture and repair and to ensure close co-operation with industry so that the maximum benefit may be obtained from its experience, resource and enterprise. This policy will be to continue to use its own workshops for the manufacture of equipment and components for which they are laid out, as well as for the repair of all equipment. A proviso is made that costs must be competitive, and it is added that the Commission will continue to rely on outside industry for the supply of new diesel and electric power equipment and it may purchase complete locomotives and rolling stock from industry as its programmes require and when circumstances justify this.

The statement, which is given in full elsewhere in this issue, goes on to say that the introduction of modern types of motive power and equipment must lead to a reduction in the existing fleet of steam locomotives and rolling stock and that the falls in workshop capacity of British Railways resulting from the implementation of the policy will be carried out by phases. There will also be a reduction in the orders placed on outside industry, especially for wagon repair.

The implications of this statement are clear. They are that British Railways will continue to manufacture locomotives and rolling stock in their own works and, indeed, it is well-known that some of the most important shops are being equipped at considerable expense for this purpose. It raises once more the age-long argument as to whether this policy is in the best interests of the railways, industry and ultimately of the nation.

In striking contrast to the decision which has been taken by the British Transport Commission, the South African Minister of Transport has appointed a committee to inquire into the manufacture of railway requirements by private industry and to report whether it would not be more advantageous economically, both from the point of view of the railways and in the national interest, to entrust private industries with some of the manufacturing work which the railways are at present undertaking or intend to undertake in the future. The membership of the committee, which includes both railway officers and prominent industrialists, is given in our Personal pages.

The policy adopted by the British Transport Commission is understandable when viewed in the narrow confines of its own self interests, although even in that matter it may be deemed short-sighted if it results in a diminution of industrial activity in the country. The basic problem as to whether railway workshops or private industry should build locomotives and rolling stock ultimately can be resolved only at a much higher level and, indeed, by a government which has ultimate responsibility for the well-being of the national economy as a whole. Such an authority would recognise the need for any exporting capital goods industry to have an assured home market and would know that in the United Kingdom alone among major exporting industrial countries, the railways undertake their own manufacture. In all other countries the national railway systems rely on industry for their rolling stock and confine their operations to the conduct of strictly transport business.

Even in the United Kingdom there are no other major nationalised industries which build their own capital equipment. The National Coal Board, the Electricity Board, and B.O.A.C. for example, all obtain their capital equipment from private enterprise on the basis of a joint partnership.

If, as a result of a diminution in the orders placed by British Railways with the private building industry, the latter is unable to remain in business, the loss of export orders inevitably must have its reaction on the economy of the country and ultimately on the well-being of the railways themselves, by reason of the loss of traffic and reduced purchasing power. Moreover, there would seem to be a good deal of duplication

of productive capacity by reason of the substantial re-equipment of railway workshops which is being undertaken at the present time when similar capacity in the private sector is under-employed.

The position thrown into prominence by the B.T.C. statement is not new. It has obtained since before the first grouping of railways, but the position from the point of view of the private industry is very much worse at the present time than it has been hitherto. Between the wars the British railway manufacturing industry could look for substantial outlets for its products to many British owned railways overseas and to a very wide spread of markets in the British Commonwealth of Nations, which indeed were its traditional customers. In many of these competition from overseas manufacturers, who enjoy the benefit of an assured home trade with their own railways, has become extremely acute. It is for this reason that the policy adopted by the B.T.C. is of greater importance from the national viewpoint at the present time than any adopted by its predecessors could have been in the past.

Grouting in Civil Engineering Works

THE railway civil engineer is familiar with grouting not only in repairs to bridges and tunnels, but also to strengthen earth cuttings and embankments as well as the formation. Bridging and tunnelling grouting is almost daily practice and it has been estimated that in the course of the last seven years over 100 slips in the cohesive soils of embankments have been successfully stabilised by grouting. For cutting slips it is used as ancillary to other measures and like the strengthening of the formation it has proved satisfactory.

On May 4, a paper was presented to the Society of Engineers (Incorporated) at Abbey House, Westminster, by Mr. D. J. Ayres reviewing the many uses of injection processes in civil engineering to stabilise structures and alter the strength, permeability, compressibility, frost susceptibility and other properties of soils. In dealing with grouting materials the paper divides them into four groups: soils, bitumens, chemical grouts and cementitious grouts. Soils such as bentonites are used mainly for reducing the permeability and frost susceptibility of soils. On the other hand, to secure the impermeability of granular soils or fissured rock bitumens applied either as a cold aqueous emulsion or as hot bitumen are valuable.

Mr. Ayres proceeds to discuss cementitious grouts on the basis of their contents and characteristics. First, the cementing agent is considered. The commonest, Portland Cement, is effective in reaction with pulverised fuel ash and other pozzuolanic materials to give high sulphate resistance. Some cementitious quality is also to be found in finely-ground slags and minerals. Secondly there is the aggregate to be considered; this is usually pulverised fuel ash, fine sand or some other such material in granular form. The third and last consideration is the wetting agent necessary to assist the mixer to achieve the full wetting of all particles. Non-ionic wetting agents are considered superior to anionic especially with regard to the effect of rapid-hardening additives in the mix. Either hydraulic or pneumatic application may be used.

The author quotes various uses of grouting carried out under him, among them the stabilisation of quicksand conditions by the silica-gel process. Others include the strengthening of an ash fill by various cementitious grouts and the strengthening of bridges and viaducts by injecting into the hearting.

Mining Subsidence

IN 1952, the Institution of Civil Engineers appointed a Mining Subsidence Committee under the chairmanship of Mr. W. K. Wallace, Past-President of the Institution, and former Chief Civil Engineer, London, Midland & Scottish Railway. The committee, whose report was recently published, included engineers experienced in mining subsidence problems and also representatives of the British Transport Commission, the Department of Scientific & Industrial Research (Directors of Building and of Road Research), the Institutions of Municipal and of Structural Engineers, the Ministries of Housing & Local Government and of Transport & Civil Aviation, and the National Coal Board.

Its terms of reference were to examine the existing knowledge of the effects of such subsidence on the stability and durability of all kinds of civil engineering works and structures on or near the surface, and to consider how research could eliminate or ameliorate these effects; to make recommendations for research sub-committees were appointed to deal separately with four branches: Bridges, Public Utilities, Roads, and Structures. To prepare its own report each sub-committee considered the subject under five main headings: (*a*) types of movement, (*b*) effects of movement, (*c*) precautionary measures, (*d*) remedial measures, and (*e*) research.

Although bridges and roads are included as main-heads and dealt with by sub-committees, railways are not. In our March 14, 1958 issue, an article described the effects of mining on British Railways, and the latter half of it would seem to apply to railways elsewhere also. Meanwhile the committee's report on the effects of movement on bridges and details of precautions recommended to be taken in their design and in connection with existing bridges is invaluable. Measures taken to remedy defects in bridges caused by subsidence are also dealt with comprehensively.

Regarding subsidence generally the report states that the nature of ground movements is now established, and continued research by the National Coal Board and other agencies makes it probable that in time the range of movements in any particular area will be predictable. It further recommends that for future bridge planning continuous records of actual movements be obtained and compared with expected movements forming the basis for the design.

Transport Expansion in South Africa

TRANSPORT in the Union of South Africa can now carry all traffic on offer and also has some reserve to meet demands to be expected from normal economic expansion. While the modernisation and expansion plan which has been occupying the attention of the Railways administration during the post-war years has not yet been completed, it has reached such an advanced stage that the country is already enjoying better services. From now on, it will be a question of adding refinements, negotiating the difficult transition stage of teething troubles and unavoidable delays and of bringing new works and new assets into productive service. The completion of such projects as the introduction of C.T.C. on a large scale, railway electrification, the further improvement of harbours, mechanisation of the main marshalling yards, the mechanised handling of cargo at ports, and the development of communications and the conversion to diesel traction of lines in South West Africa will round off the present programme. During the last five years, for instance, expenditure from capital and betterment funds amounted to £252,359,606, compared with £50,517,300 in 1955-56, £53,856,425 in 1956-57, £68,850,453 in 1957-58, and £79,135,428 in 1958-59. If these amounts are added to the £72,574,000 provided for capital and betterment expenditure during 1959-60, the total for six years becomes £358,608,606.

Electric working on the South African Railways dates back as far as 1926, when the Pietermaritzburg-Glencoe section of the Natal main line was converted. At the end of the financial year 1953-54, 859 route miles, representing 1,748 single track-miles, had been electrified. During the next five years, a further 267 track miles were added, bringing the total mileage of electrified track in service at the end of March, 1958, to 2,015, or 11.4 per cent of the total mileage of railways, while the total mileage on completion of the present electrification programme will amount to 2,980 track-miles. Expenditure on electrification of railways during the past five years amounted to about £23 million, and expenditure of £6½ million has been approved for the financial year ending March 31, 1960. There will then be electric working from Cape Town to Beaufort West (339 miles), Durban to Volksrust (321) and Harrismith (263), Witbank to Klerksdorp (200), and from Pretoria to Kroonstad (160 miles).

The legacy of the war in the shape of over-age wagons and depleted motive power has now nearly disappeared. On April 1, 1953, there were 120,940 wagons (in terms of four-wheelers) in service, with a total carrying capacity of 2,415,341 tons. On March 31, 1958, the corresponding number of wagons was 146,778 and the carrying capacity 2,953,077 tons. This represents an advance of 21.364 per cent in vehicles and of 22.263 per cent in carrying capacity. The actual number of

goods wagons in service at the end of March, 1959, was 87,298. During the five years, 1953-1958, S.A.R. added many specially designed goods wagons to the fleet. These included, again expressed in four-wheelers, 3,000 cattle wagons, 2,000 fruit, and 500 refrigerator wagons. The last-mentioned are in great demand as a result of the expansion in production of perishable products, including fresh fish.

At the end of March, 1953, the tractive effort, represented by all the locomotives in service, had fallen to the low level of 87,735,560 lb., inadequate for the duties to be performed. By the end of March, 1958, tractive effort had been increased to 104,624,920 lb., with considerable orders for new locomotives still to be delivered. The advance in traffic carried is satisfactory, considering that during the early years of the modernisation and expansion planning, resources to accept traffic fell below the volume of traffic on offer. During the financial year 1953-54, 71,172,652 tons of goods were carried by rail in comparison with 77,004,436 tons carried during 1957-58.

Construction of new lines and the multiplication of existing tracks has been a major item on the railway improvement and development programme during the last five years. At the close of the year ended March 31, 1954, the total track-mileage of the South African Railways was 14,025 miles which was made up of 12,872 miles of single track, 498 miles of double track, 15 miles of triple track, 22 miles of quadruple track and four miles of quintuple track. During the ensuing four years a total of 311 track miles were added bringing the total track mileage at the end of the 1959 financial year to 14,336 miles made up of 12,637 miles of single track, 737 miles of double track, 23 miles triple track, 33 miles quadruple track, and four miles of quintuple track. Expenditure during the last five years on new railway construction amounted to £34 million.

Czechoslovak Locomotive Building

APART, possibly, from a few industrial and fireless locomotives, steam locomotive building in Czechoslovakia, for both home and export, has recently come to an end, and in future only electric and diesel types are to be constructed. Though steam locomotive building in the former Austro-Hungarian empire began as early as 1840, under the direction of the Englishman John Haswell, the first locomotive-building plant in that part which is today Czechoslovakia was not established until 1899, and its first product, an 0-6-0T, was turned out in 1900. This was the works which is now known as CKD. Thus the complete history of steam locomotive construction spans scarcely six decades. Yet appropriately enough, as the last steam locomotives were being completed, there appeared a volume which in one sense was a catalogue, but in essence was a historical review of locomotive types built since the first world war, for only brief mention was made therein of pre-1914 types, though they included some of Gösdorf's 2-6-4 express engines, which were among the most notable of the classes introduced into Europe in the first decade of this century. Only three locomotive-building plants have been in being during the 60 years, viz., First Czecho-Moravian, Breitfeld Danek and Skoda, and the first two were combined into CKD in 1928.

Very striking and advanced locomotive designs are to be found in the construction of the last 35 years, but all of them have been for the Czechoslovak State Railways (CSD), the export orders being made up almost entirely of ordinary models, often existing standards of the country concerned. Perhaps most noteworthy of all was the express Pacific of Class "387" built first in 1926-27, for it set the general lines and standards which have been followed on the CSD during the succeeding 30-33 years. An axleload of 17 *tonnes* combine with the need to haul 400-450-ton long-distance express trains and go round 525-ft. curves were the factors which set the pace for the design, but these problems were solved in a most skilful manner, and these locomotives were, in fact, classics. A study of their general and detail design was illuminating as long as steam locomotives were being built. All the succeeding and larger classes, such as the 2-8-4 Class "486," the 4-8-2s of Classes "475" "476" and "498," and even the 130-ton 4-8-4T engines of Class "476-1," can be traced back in design to this superb 4-6-2. Moreover, all these classes had splendid lines; but the same could by no means be said of the CSD goods and goods tank engines of the period 1920-35, which were among the ugliest engines in Europe, with a characteristic sinking-down-in-front appearance which, curiously enough, seems to have appeared first in the first Czech export order, a large batch of 2-8-0 oil-burners for Roumania from the Skoda works.

Today, with a large programme of electrification and conversion to diesel working, scheduled to be carried out by 1970-71, the two locomotive building works now in being—Skoda and CKD—are in the later stages of a transition period, for all designs for standard electric and diesel motive power have not yet been finalised. The 435-class of 750 b.h.p. Bo-Bo diesel-electric seems more or less standardised as a low-power line-service diesel, but trials are being made with a 1,650 b.h.p. Co-Co 105-ton locomotive with a view to evolving a standard main-line type. Similarly, there is a standard main-line 3,000-volt d.c. electric locomotive, class E.499, a Bo-Bo of 80 tons weight and 2,000 kW. continuous output. But with the change-over in motive power there has come a strict rationalisation. Skoda now is to build all electric locomotives and CKD all diesel locomotives, and Tatra-Smichov is to deal with all rail-cars, though Skoda has also built, and is now testing in collaboration with the CSD, a 3,200-h.p. gas-turbine locomotive with mechanical transmission. Recent exports of motive power have been mainly to Iron Curtain countries, including a number of 760-mm. gauge bogie diesel locomotives to Russia, and also to Lithuania, and elsewhere. All exports, to whatever destination, are handled by the national organisation Strojexport.

East African Railways & Harbours in 1958

THE report on East African Railways & Harbours for the calendar year 1958, a copy of which we have received from Mr. J. R. Farquharson, the General Manager, has been produced, as was last year's report, with promptitude. It is again an attractively produced publication, with informative graphs and photographic illustrations of topical interest. In presenting it to the Chairman of the East Africa High Commission, the Commissioner for Transport, Major-General W. D. A. Williams, who has recently retired, points out that trading conditions in East Africa remained generally static throughout the year and there was no marked change in the transport pattern. The year saw two very encouraging developments: the operational economies which did so much to restore the unfavourable position obtaining in 1957; and the change of emphasis in development policy, "which is now towards those long-haul facilities which will be at once advantageous to the internal economic expansion of the Territories and to the revenue of the Administration."

The main achievement of the year, the report states, was to have carried the heavier goods traffic while reducing working expenditure. Ordinary working expenditure on railway account was some £70,000 less than in 1957. This saving was effected despite the higher volume of traffic and was only made possible by economies, mainly in the form of staff reductions, lower engine mileage, and reduced maintenance costs. The position was helped by the steadier level of prices, but the charges for local public services, such as water and electricity, tended to increase, and there was a wage increase for lower paid staff.

The acute net revenue position and the general financial stringency had a retarding effect on the development programme. There is, it is stressed, a need to find about £12 million over the next two years. Some of this can, no doubt, be provided by short-term loans, and possibly by betterment contributions, but unless the present programme is to be further curtailed, which might have serious repercussions on the ability to carry the expected higher volume of traffic, it will be essential to borrow £10 million of the total by way of long-term loans raised in London or elsewhere. The £225,000 contribution (to Betterment Fund) of 1956, the small £50,000 total of 1957, and the contributions totalling £100,000 in 1958, compare unfavourably with the average of more than £1 million annually contributed over the period 1949-55.

The third class railway fares in East Africa, based on 6 cents a mile for the first 100 miles and 4¼ cents a mile thereafter, are believed to be, in general, competitive. With goods traffic the

railways, with their traditional differential tariff charging for goods according to value, are proving vulnerable to road competition. A review, made in 1958, indicated that the annual loss to the roads was increasing rapidly and was then more than £800,000. The success of the new tariff, introduced on January 1, 1959, depends, therefore, on its ability to bring back traffic lost to the roads.

Some of the principal results for 1957 and 1958 were :

	1957	1958
	Thousands	
Railways, steamers & motor transport:—		
Total train-mileage	9,292	9,342
Passenger journeys	6,451	6,218
Goods tonnage	3,807	3,902
	£ thousands	
Coaching receipts	2,067	2,147
Goods receipts	13,814	14,749
Total receipts	17,743	18,930
Working expenses	14,027	13,957
Harbours:—		
Receipts	4,616	4,509
Expenditure	3,820	3,728

Reduction in railway betterment plans was considerable. The requirement in respect of locomotives, related to the purchase of new diesel power, remains virtually unaltered, but for general improvements, which accounted for nearly half of the total loan programme, it has been necessary to make a considerable change in emphasis. The amount of capital released by this revision of the loan programme will be used in the main to build two new lines : (a) a 44-mile branch from Kilosa on the Tanganyika Central Line to Mikumi, so as to reduce the cost of transport to and from the Southern Highlands and to retain traffic on the railway and railway road services; and (b) a cut-off in Uganda between Bukonte and Jinja, to reduce operating costs over that section. Two further projects still in the planning stage are: (c) extension of the Tororo-Soroti line to Gulu, so as to improve the services to Lango, Acholi and West Nile; and (d) a connection between the Tanganyika Central Line and the Tanga and Kenya/Uganda Lines.

The deteriorating traffic situation led to introduction of special rates to counter road competition and to help local industries to establish their products in markets overseas or in adjoining countries. It was decided that,as from January 1, 1959, the maximum rate on the rail and inland marine services should be brought down to 40 cents a ton-mile and, with some exceptions, the lower class rates should be increased by 5 per cent. Although more traffic was carried, a marked feature was the fall in high-rated goods. Traffic on the Western Uganda Extension again increased. On the Tanga Line, public ton-mileage fell by 6 per cent. Public goods traffic on the Lake services increased by 8 per cent. Goods traffic carried by the road services was 83,000 tons compared with 78,000 tons in 1957; the total number of passengers carried increased by 108,000 to 573,000. For the first time the total revenue earned from the Hotel & Catering Services was slightly greater than working expenditure.

Much has been done by E.A.R. & H. to further the recruitment and training of staff, more particularly of non-Europeans. At the end of 1958 there were eight Cadet Engineers, four Cadet Mechanical Engineers and three Cadet Traffic Superintendents under training for assistant officer posts. These included one African and two Asian cadets. At the end of 1958 there were 591 trainees and apprentices under training. There continued to be a reduction in the numbers of staff recruited from overseas. To attract young men domiciled in East Africa to a career on E.A.R. & H., a further local recruitment campaign was undertaken with some success in attracting a higher standard of entrant.

The value of new construction work during 1958 was £2,048,000, a decrease of £1,673,000 on the previous year. In Tanganyika a 23-mile extension was constructed between Chilingula, on the Southern Province Line, and Masasi. On Lake Victoria, construction of the new port of Mwanza South began in March. Work on the scheme to provide interlocked double-wire signalling at wayside stations between Mombasa and Nakuru continued. Alterations and additions to the mechanical engineering workshops at Nairobi progressed well. Train control telephone circuits were extended from Broderick Falls to Tororo, and there now remains only the section between Tororo and Jinja to be equipped to provide control circuits throughout on the main line from Mombasa to Kampala.

Letters to the Editor

(The Editor is not responsible for opinions of correspondents)

Railway Pensioners

May 13

SIR,—Now that it has become customary to grant increases of wages to compensate for the continual rising cost of living, those with static pensions are, in effect, helping to subsidise the wage-earners.

During the time when all pensioners were treated equally, one could grin and bear it, but now that large groups of public servants, such as the forces, the police, municipal workers and others have been selected to receive larger pensions, it follows that those who have been omitted, such as transport workers, are now also subsidising their fellow pensioners.

The main reason for pensions is to enable one to plan for old age. What a mockery this has become, as planning for security and a peaceful old age has now been replaced by anxiety and in some cases fear for the future.

How hollow becomes the phrase, so often heard when saying goodbye to someone taking up their pension, " and now you will be able to enjoy a well-earned rest."

Perhaps readers of *The Railway Gazette* will not be so surprised at transport workers being left in the cold, for the editorial comments about the Honours Lists have shown that transport is the Cinderella of public employment—until war breaks out.

Yours faithfully,

C. GRASEMANN

8, Napier Court, S.W.6

The U.S.A. Railroad Position

May 13

SIR,—On March 6, an article suggested that an upturn in industry would soon change the railroad position and the latest report from the Association of American Railroads does show some improvement in traffic for the first quarter of this year.

In 14 weeks to April 4, wagon loadings were 8,021,820, an increase of 528,510 on 1956, or 7 per cent, though a decrease of 1,248,400, or 13 per cent, from 1957. Except livestock and merchandise " smalls," all commodities moved freely. Loadings of grain totalled 732,610, an all-time high for this period of the year and 5 per cent above 1958. The movement of grain in large volume is likely to continue, as stocks on farms of all sorts of grain are far above the average level. It will throw a strain on the supply of box wagons, which are also required for the carriage of miscellaneous and manufactured goods, now growing at the rate of 11 per cent over 1958, but still 11 per cent behind 1957.

Flat wagons are also in great demand this year, the number loaded being 245,700, an increase of 55,000, or 29 per cent. The number of flat cars loaded with road trailers was 97,784, a rise of 56 per cent. In the week ended April 4, the number of flat cars loaded with road vehicles was 8,072, a record for any week and 83 per cent above last year. Loadings of covered hopper wagons also expanded, totalling 259,255 in 14 weeks, an increase of 50,450 on 1958 and a fresh record.

As in Great Britain, coal output in the United States is declining. Coal loadings were, however, 5,630 more than in 1958, but 348,560, or 18 per cent, below 1957. Overseas exports of coal were 7,548,500 tons in the first quarter of the year, 28 per cent under 1958. In January and February ore imports for rail movement were 6 per cent lower than in those months of last year.

Altogether the railroads have a lot of lost traffic to recover. Meantime they economise by scrapping steam locomotives and installing diesels. At April 1, they owned 1,198 steam engines, with 548 under repair, 558 electric units with 101 unserviceable and 27,837 diesel units, of which 1,472 were out of action. Diesel motive power furnished 95 per cent of the units fit for work.

Yours faithfully,

YOUR CORRESPONDENT

Westminster, S.W.1

THE SCRAP HEAP

U.S.A. Sales Promotion, 1899

It has come to our notice that some houses in the city have received telegrams from America intimating that it is impossible to accept orders for railway rolling stock in consequence of the great pressure of business. One house which received such a message has informed us that they never placed or had an order for such stock in their lives, but fancy it is a species of American puff, perhaps similar to the much-talked-about order for 50 locomotives which a Philadelphia house was stated by a contemporary to have received from an Indian railway company—a report which is not generally credited.—*From "The Financial Times" of April* 24, 1899.

Those Were the Hours

William Platford, stationmaster at Brundall, said, "sometimes he wrote a message and sometimes he instructed his clerk, Thomas Spicer, to do so. More frequently the latter did so and sometimes his son, a lad of twelve years, did so whilst he was standing by, and then they would send the message. . . . His hours were from 6.30 a.m. to 9.25 p.m. He was not hard at work all the time. . . ."

[Extract from evidence given before the Court of Inquiry which investigated the collision on the single line near Norwich, G.E.R., on September 10, 1874. The mistake which caused the accident, in which 25 lives were lost, was not made at Brundall, but at Norwich Thorpe Station.—ED., *R.G.*]

Lambeth Walk Express

There was only 1½-in. clearance as a 64-ft. railway coach, built in 1923 for V.I.P. traffic on the Victoria-Dover boat-train, was manœuvred on two trailers from Lambeth Walk into Wake Street, London, last week. The coach is a gift from British Railways to the Lollard Adventure Playground Association, of which the Chairman is Lady Allen of Hurtwood, for its blitz-site children's playground at the end of Wake Street. Already the boys have a workshop there, and the coach will provide a place for the girls to mend clothes and make curtains for the old folk and hold tea parties and whist drives for them.

The Rule Applies the Brake

It is unreasonable, to say the least, to hold to the rule of changing train crews every 100 miles in our modern times of diesel engines and fast trains. Likewise, the ideal of having firemen who do no firing on diesels and extra brakemen who do no "braking" makes no sense when the rails are fighting for their economic lives against more modernised labour practices on airplanes and truck lines.—*From the "Joplin (Mo.) Globe," February* 26, 1959.

[The Association of American Railroads states that featherbedding on the railroads costs more than $500 million a year. "Featherbedding" may be defined as pay for work not done or for services not performed.—ED., *R.G.*]

Holyhead Commemorates Royal Visit

A column and plaque commemorating Prince Charles' first visit to the Principality as Prince of Wales, were unveiled recently by Mr. R. F. Summers, Member of the London Midland Area Board, British Transport Commission. The Queen, the Duke of Edinburgh, the Prince of Wales, and Princess Anne disembarked from the Royal Yacht *Britannia* on August 9, 1958, at the McKenzie Pier, Holyhead. The Holyhead Urban District Council suggested a permanent plaque and the British Transport Commission, which owns the pier, gladly supplied a column of polished black granite, to which the plaque is affixed. Both were designed by Mr. R. E. Price, M.R.S.I., M.R.I.A. The plaque is of solid cast bronze, with raised letters in bold relief. It bears the Prince of Wales' feathers and the Welsh Dragon, and an inscription recording the Royal visit. The previous visit to Holyhead by a Prince of Wales had been by the present Duke of Windsor, who landed there on his way to Caernarvon Castle for his investiture as Prince of Wales in 1911.

The erection jointly of the column and plaque by the B.T.C. and the Holyhead U.D.C. is stated to show the close relationship between British Railways and the town and harbour of Holyhead, where some 85 per cent of the working population are employed by the London Midland Region on the railway and railway marine services and at the harbour.

Rule Delays Train

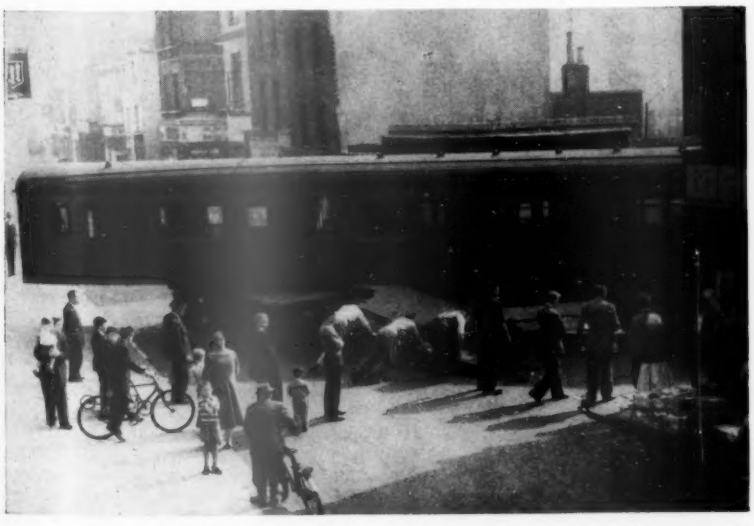
Nearly 1,000 New York commuters learned the hard way how ridiculous union regulations can be at times. Departure of a New Haven Railroad train was delayed 23 minutes recently because of a dirty locomotive windshield. The train's engineer refused to wipe the windshield on the grounds it was somebody else's job to do it. Finally, a workman of the proper classification arrived at the scene, cleaned the window, and the train with its impatient passengers pulled out of Grand Central Station. We'll wager that some of the passengers would have been happy to wipe the windshield if they had known that was the only thing delaying the train's departure. It is no wonder the railroads are having difficulty surviving in this modern age of ridiculous union rules.—*From the "Mobile (Ala.) Press," February* 27, 1959.

Any More for the Bank ?

(*The "Travolator at the Bank Station." See our April* 17 *issue*)

From a facetious point of view
It almost seems a pity
That progress has designs upon
The Waterloo & City.
Though, through long generations,
Its reputation stank,
All now will be forgiven, with
Improvements at the Bank,
And many hearts that once cried out
For valvular repairs,
When faced with the necessity
Of getting up them stairs,
Will leap for joy when, at long last,
They find themselves in clover,
With travolators on the go
And mountaineering over.
The secretary and the clerk,
The dapper City gent,
The bowler hat and brolly types
On money-making bent,
Who straphang patiently each morn
And do the same at night
And get much satisfaction from
Bemoaning their sad plight,
Will have to think of something else
About which to complain,
When they can't grumble any more
At going down "The Drain."

A.B.



Obsolete railway coach, built in 1923, *presented by British Railways to the Lollard Adventure Playground Association, arrives at Wake Street, Lambeth*

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Radio Communication

Two-way radios are now being installed on certain locomotives used in the Witwatersrand area for marshalling and shunting work. It is hoped that these radios will solve some of the communication problems between locomotives at work and yard or other control points. With the growth of traffic and the fact that locomotives have to work at considerable distances from control points, the old signalling systems by hand, semaphore, or flag have been found impracticable under all conditions.

Reduction in Fares

Reduced fares for travel on the " Blue Train " came into effect on May 1, 1959. The basis of computing the fares has been changed to ordinary first-class fare plus one-third of the single fare as against the ordinary fare plus one-half of the single fare charged in the past. In the case of return fares, the additional 33⅓ per cent applies to the single fare in each direction. This means that the single fare by " Blue Train " from Johannesburg to Cape Town, a distance of 956 miles, will now be £16 15s. 7d. (formerly £18 17s. 6d.) and the return fare £27 16s. 8d. (£32 0s. 6d. in the past). Children between the ages of three and 12 are charged half the ordinary adult fare plus the full supplementary fare (33⅓ per cent). Under the age of three they travel free when travelling with an adult, but when more than 12 years of age the full fare applies.

In the case of ordinary passenger trains the surcharge applied for the exclusive use of a coupé or when two passengers, three in the case of second-class, want a compartment to themselves, has also been reduced.

In the case of coupés a surcharge of one-fifth of the single fare is raised for first class and four-fifths for second class. First-class compartments for use by two people only are charged for at the rate of two first-class fares plus two-fifths, and when three persons want a second-class compartment to themselves the fare is that for three persons plus three-fifths. First- and second-class coupés normally accommodate two and three persons respectively, and compartments four and six persons.

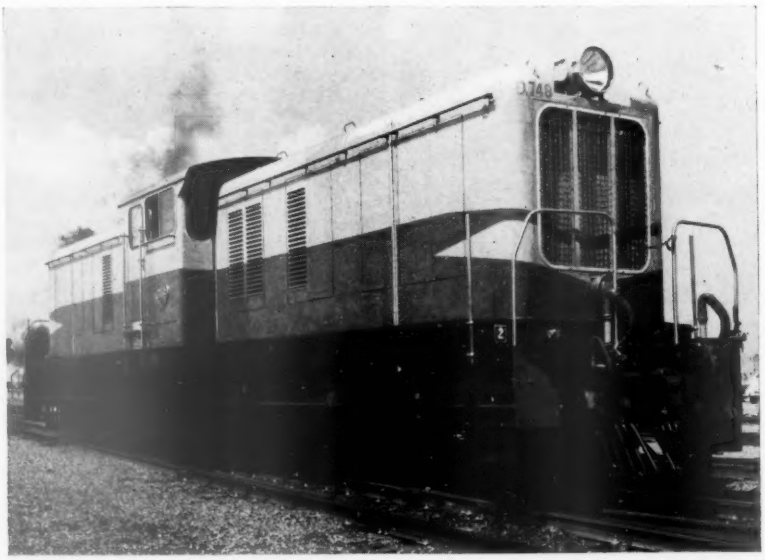
Ticket Barriers

The barrier system introduced some years ago for passenger traffic on the Witwatersrand line and in Pretoria has proved successful in the matter of ticket inspection where passenger services are heavily patronised. It was decided some months ago to introduce certain changes to save man-power by restricting the barrier system to the central Reef area, between Jeppe and Industria. In these areas, trains at peak periods are so full that ticket examiners find it almost impossible to get through the train in time. In the case of Germiston and President, where barriers were removed, it has been decided to re-introduce barrier control.

At Reef stations outside the congested Industria-Jeppe area the maintenance of barriers has been found uneconomic because the number of passengers can be handled effectively on the trains by ticket examiners. Fewer men are needed on the trains than are required to man the barriers. The actual saving in man-power as the result of the change is 68.

Diesel-Hydraulic Locomotives

The seven 1,420-h.p., B-B, 74.4 ton diesel-hydraulic locomotives ordered by the South African Railways from Henschel und Sohn, Kassel, Germany, at a cost of £67,950 each have arrived in the Union. The locomotives were ordered two years ago, and are now being prepared for service in the diesel sheds at Germiston.



Henschel 1,420-h.p., diesel-hydraulic locomotive for South African Railways

New Rolling Stock

Refrigerator and fish wagons, water tank and liquefied petroleum gas tank wagons, and 677 cattle wagons were among the new rolling stock placed in service by the Railway Administration during the first quarter of 1959 (January to March).

The total number of goods stock placed in service was 2,244, including 1,555 goods wagons built by Dorman Long (S.A.) Limited; 245 wagons built by Alpheus Williams & Dowse Limited; 255 wagons built by Wright Boag & Head Wrightson Limited; 40 fish and refrigerator wagons imported from Germany, and 61 tank wagons built in Railway Workshops.

Fifteen Class " 5E " electric locomotives and three narrow-gauge steam locomotives were added to the establishment while new passenger stock included 53 suburban coaches imported from the United Kingdom and four air-conditioned dining and kitchen cars imported from Western Germany.

Rolling stock withdrawn from service and scrapped during the quarter included one narrow-gauge locomotive, 35 passenger coaches, and 770 goods wagons.

INDIA

Coach Factory to Produce Vans

The Integral Coach Factory at Perambur, near Madras, which has so far been producing third-class coaches only, has begun production of third-class brake vans. Works will also produce postal vans and first-class coaches.

The first third-class brake has already been produced. The design of first-class coaches is in hand, and it is expected that the Factory will embark on construction of this type also during the current Five-Year Plan period.

It is proposed that the Integral Coach Factory should also undertake the construction of prototype all-welded bogie wagons. The plant has so far turned out over 700 coaches, and the present production averages more than one coach every six working hours.

VICTORIA

Standard Gauge Construction

Good progress is being made on the standard gauge line construction between Melbourne and Wodonga.

A contract let for the earthworks between Mangalore and Wodonga, which entails the moving of 900,000 cu. yd. of earth from railway cuttings, strips of acquired land, and excavations for dams on private properties adjoining the line. Work under the contract was started in January in the north-eastern section of the track between Barnawartha and

Wodonga. When the Broadmeadows-Mangalore section is taken into account some 1,500,000 cu. yd. of earth will have to be moved between the former place and Wodonga.

There is a total of 195 bridges to be constructed alongside existing ones carrying the present 5-ft. 3-in. gauge track. Sub-structure work has been completed on 42 of them, mainly between Mangalore and Wodonga, and is in hand on another 76. Of this latter number 32 are sufficiently well advanced to enable earthworks to start. In addition 102 culverts have been completed and work is in progress on a further 61.

A steel coffer dam required for the construction of the concrete pier in the river bed for the bridge over the Broken River at Benalla has now been completed and pile driving and abutments finished. All concrete piles for the 16-span bridge over the Ovens River at Wangaratta have been driven and work has begun on two coffer dams needed for the erection of the two main piers in the river bed. An order has been placed for the fabrication and supply of steel work for bridges and deliveries are expected shortly.

Electric Parcels Vans

To cater for increasing business, the Railways are expanding the electric parcels van fleet from seven to nine. Two motor coaches no longer required on the suburban system are to be converted to parcels vans at Newport Workshops. Seats and partitions will be removed, shelves and double goods van doors fitted and the exterior surface covered with steel sheathing.

NEW ZEALAND

Branch Line Closures

The Minister of Railways is considering the cessation of train services on six branch lines, totalling 137 miles. They are the Dargaville-Donnelly's Crossing line, also known as the Kaihu Valley Railway, 22 miles 25 ch.; the Gisborne-Moutohora line, 47 miles 41 ch.; and the Longburn-Foxton line, 19 miles 31 ch., in the North Island.

In the South Island, the lines listed for closure are the Oxford branch from Rangiora in North Canterbury, 22 miles 3 ch.; the greater part of the Ngapara branch near Oamaru in North Otago, about 12 miles 40 ch.; and the Waikaia branch in Southland, 13 miles 63 ch.

Operating losses on these six lines during the 1957-58 financial year amounted to £84,000. In addition, an expenditure of about £665,000 on track and bridge renewals within the next few years would be needed to put the lines in proper running order. None of them has carried more than a meagre traffic in recent years.

UNITED STATES

New Tank Wagons

A new type of tank wagon introduced by the North American Car Corporation is a bogie vehicle, 55 ft. long. The all-welded tank has a capacity of 20,000 gal. The tank, designed to withstand internal pressure up to 100 lb. per sq. in., can be insulated and equipped with heating coils if required. The capacity is higher than that of any previous type of tank wagon in the U.S.A. The aim of the design is economy in transport by reducing the proportion of tare to paying load.

C.T.C. on New York Central Lines

A further stage has been reached of the New York Central System's conversion of its New York-Chicago main line into C.T.C.-controlled double track, instead of the former four tracks, over a considerable proportion of its length. The latest section over which C.T.C. has been brought into use is the 133 miles between Toledo, Ohio, and Elkhart, Indiana, signalling over the whole of which is now controlled from one control panel at Toledo. The next length to be tackled will be the 130 miles between Toledo and Cleveland.

CANADA

Tourist Accommodation

Passengers holding Canadian National Railways coach class tickets are now able to occupy luxury individual room space on a trans-continental train. The new accommodation to be known as " Tourist Roomette " is a compact room containing single bed and complete toilet facilities, which in the past has been available only to holders of first-class tickets. This innovation became effective from April 26 on the C.N.R. " Super Continental Limited," which operates daily out of Montreal and Toronto to Winnipeg, Edmonton, and Vancouver. The cost is only 30 per cent more than the present charge for a tourist lower berth. Coupled with this new service will be the operation of cafe parlour cars providing additional meal service for all passengers, as well as lounge facilities for those occupying rooms in the new tourist cars.

C.N.R. Suggestions Scheme

The Canadian National Railways has launched a scheme whereby employees can be paid up to $10,000 for suggestions of value. The highest amount paid so far is $200, but the ideas are flowing in and company officials are reported to be satisfied with the results.

WESTERN GERMANY

Additional Car-Sleeper Trains

Besides the trains already in existence (Ostend - Munich, Hamburg - Basle - Chiasso) the Federal Railway is to run for the first time, car sleeper trains between Grossenbrode Quay and Munich, three times weekly between June 21 and September 3; and between Muelheim-Speldorf (Ruhr) and Munich, also three times weekly between June 29 and August 30. British motorists travelling Belgium or Holland can use the latter train between either Dusseldorf or Cologne-Kalk and Munich.

BELGIUM

Wagons-Lits Company

The net profit of the Compagnie Internationale des Wagons-Lits et des Grands Express Européens for 1958 amounted to Belgian francs 18,104,907, more than 57 per cent less than that of francs 42,430,365 for 1957. It was decided to pay a dividend of 25 francs net a share in respect of preference shares (the same as for 1957), and ordinary shares will earn 15 francs net a share compared with 25 francs for 1957.

Publications Received

British Railways Today and Tomorrow. By G. Freeman Allen. Hampton Court, Surrey: Ian Allan Limited, Craven House. 9¼ in. × 6¼ in., 196 pp. + one coloured plate and 48 pp. half-tone illustrations. Price 25s.—The field surveyed by the author is wide. From an appraisal of the work of modern steam locomotives, and an account of developments in diesel and electric traction, he passes to a consideration of the many problems involved in the provision of efficient passenger, and faster and more reliable goods services. There are accounts of train control and the motive power organisation, and descriptions of signalling techniques and track maintenance procedure. The author concludes by emphasising his conviction that within a decade British Railways will become one of the country's most prized economic assets.

Handling Equipment.—A 174-page general handling catalogue produced by G. Hunter (London) Limited, gives comprehensive information on cranes, hoists, lifting tackle, jacks, conveyors, stackers, fork trucks, pallets, and stillages. There are sections on the modernisation of despatch bays and instructions on the design of gravity-roller conveyor systems using standardised parts to meet individual requirements. Many items in the catalogue are priced. Copies are available from G. Hunter (London) Limited, 80, Fenchurch Street, London, E.C.3.

Guide for North Wales Holidaymakers.—An eight-page booklet, " North Wales Holiday Pleasure Travel," issued by British Railways, London Midland Region, gives details of tours and day and half-day excursions for holidaymakers in Wales. Attractions described include a rail tour by the " Welsh Chieftain," which carries a lounge and observation coach with cocktail bar, day outings to Ireland, rides up Snowdon, visits to London Midland Region steamers at Holyhead, and sea trips along the North Wales coast.

Teaching Simultaneous Marshalling

Novel method of explaining, with the aid of playing-cards, hump yard shunting procedure

By K. J. Pentinga, Netherlands Railways

IF each railway wagon with its load could roll individually to its destination like a road vehicle, there would be no shunting. It seldom happens that a number of wagons loaded in a certain sequence at the same station are transported together in the same order to the same destination station and can be put at the disposal of the various consignees without alteration of the order in which they were placed in the train. In most cases wagons must be combined with other wagons at the station of departure and at intermediate stations so that their order will be changed. Shunting operations are, therefore, indispensable. Most railway companies practise their own shunting methods which they consider to be efficacious.

In this article it is explained from a purely theoretical point of view, with the aid of playing cards as in a game of patience, how the productivity of shunting in hump yards may be increased by simultaneous marshalling.

A pack of shuffled playing-cards may be sorted into correct sequence according to their suits in two ways: either, first, by sorting the cards into suits (e.g., Spades, Hearts, Diamonds and Clubs), and then by sorting the cards of each suit into their correct numerical sequence (e.g., 1-13 taking Ace = 1, Jack = 11, Queen = 12, and King = 13), or by reversing the procedure and first sorting the cards into numerical sequence and then sorting the cards of each respective value into suits. In the same way, a jumbled collection of wagons in a hump marshalling yard may be shunted by first shunting the wagons into trains and then, by the further shunting of each train, arranging the wagons in section according to the order in which they are to be detached at destinations on route or by reversing the procedure and first shunting the wagons into sections according to the order in which they are to be detached and then, by the further shunting of each section, assembling the wagons into trains.

By taking one or more packs of shuffled playing-cards containing 52 cards, it is possible to illustrate the manner in which the shunting operations of freight wagons in a hump yard can be carried out and, at the same time, to indicate the mathematical implications which will follow.

In the example below, four trains have to be made up and each train arranged in 13 sections, each train being identified by a playing-card suit (e.g., Spades, Hearts, Diamonds, and Clubs) and each section by a playing-card value. The trains have then to be assembled in the following order :—

Train 1 (Spades) S1, S2, S3,————S13
Train 2 (Hearts) H1, H2, H3,————H13
Train 3 (Diamonds) D1, D2, D3,————D13
Train 4 (Clubs) C1, C2, C3,————C13

Fig. 1 shows a hump marshalling yard with 13 sorting sidings and one reception siding; the wagons standing in the reception siding are to be pushed over the hump and into their respective sorting sidings. According to the normal method

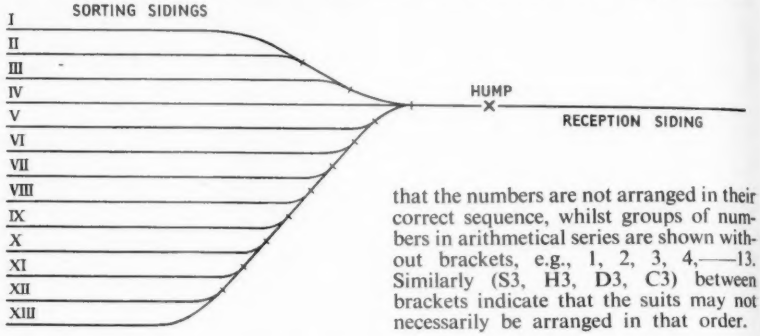


Fig. 1.—Reception siding and sorting sidings into which wagons are to be humped

of shunting, the wagons are sorted first into trains (Spades, Hearts, Diamonds, and Clubs in this case) and then into sectional order thus, Spades, S1, S2, S3, ——S13 ; Hearts, H1, H2, H3,——H13; and so on.

In the methods outlined below, this procedure has been reversed and the wagons are first shunted into sectional order, according to their destinations and then subsequently shunted into trains. This enables trains to be shunted simultaneously, and a jumbled collection of wagons in a reception yard can be arranged to form their correct sequence by means of systematic shunting based on mathematical progressions. For this purpose use may be made of principles based on either an arithmetical series of numbers, a geometrical series of numbers, or a triangular series of numbers, to obtain a final arithmetical series of numbers, being the order in which the wagons for each particular train (Spades, Hearts, Diamonds, and Clubs) must be assembled to departure.

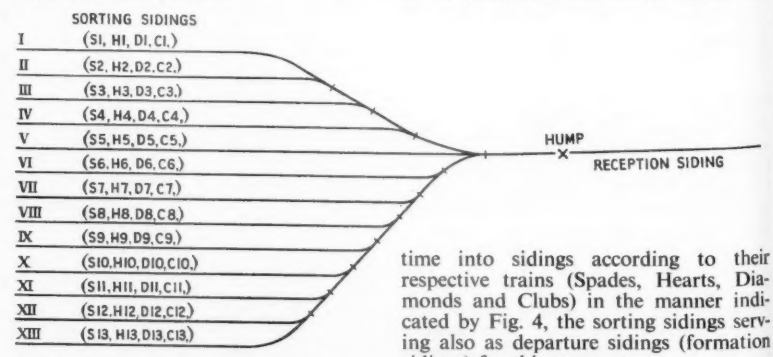

SORTING SIDINGS
I (S1, H1, D1, C1,)
II (S2, H2, D2, C2,)
III (S3, H3, D3, C3,)
IV (S4, H4, D4, C4,)
V (S5, H5, D5, C5,)
VI (S6, H6, D6, C6,)
VII (S7, H7, D7, C7,)
VIII (S8, H8, D8, C8,)
IX (S9, H9, D9, C9,)
X (S10, H10, D10, C10,)
XI (S11, H11, D11, C11,)
XII (S12, H12, D12, C12,)
XIII (S13, H13, D13, C13,)
HUMP
RECEPTION SIDING

Fig. 2.—After completion of first phase. Wagons in sectional order based on mathematical progression

An illustration of each of these three methods is given below. The placing of groups of numbers within brackets such as (1, 2, 3, 4,——13) indicates that the numbers are not arranged in their correct sequence, whilst groups of numbers in arithmetical series are shown without brackets, e.g., 1, 2, 3, 4,——13. Similarly (S3, H3, D3, C3) between brackets indicate that the suits may not necessarily be arranged in that order.

Arithmetical Series of Numbers

During the first phase the wagons standing in the reception siding are passed over the hump and run into the sorting sidings according to their sections. Fig. 2 shows the position on completion of the first phase, the brackets indicating that each group is not in any particular order of suits (*i.e.*, trains); for example, in the case of siding I, there are 24 possible alternatives (4x3x2x1) for the order in which the Aces of Spades, Hearts, Diamonds and Clubs can be arranged. The section numbers of the wagons in sidings I—XIII form an arithmetical series, viz., 1, 2, 3—13, which accounts for the name given to this method.

During the second phase the wagons in siding XIII are first collected, these are transferred to siding XII, coupled to the wagons standing in that siding and, together, they are then transferred to siding XI where they are coupled to the wagons already in that siding. This process is repeated until all the wagons have been collected. They are then again run into the reception siding on the right-hand side of the hump as shown in Fig. 3.

The third phase consists of pushing the wagons over the hump again, this time into sidings according to their respective trains (Spades, Hearts, Diamonds and Clubs) in the manner indicated by Fig. 4, the sorting sidings serving also as departure sidings (formation sidings) for this purpose.

The advantages of the arithmetical series are that the wagons need only be passed over the hump twice, and the

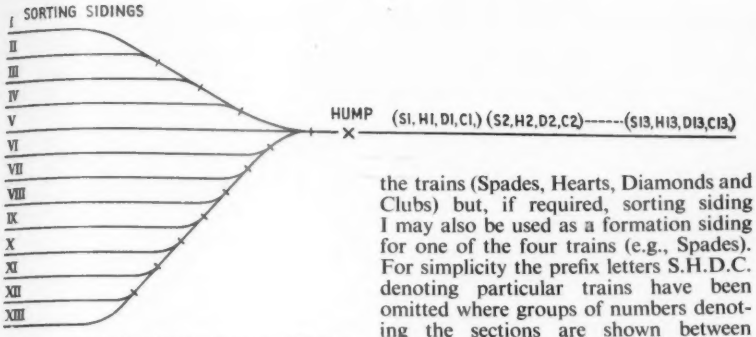


Fig. 3.—Third phase, before humping second time. Wagons are in sectional order

length of each sorting siding need only be as long as the sum of the lengths of the wagons in one section.

On the other hand a separate siding is required for each destination or section and a considerable amount of time may be required during the second phase for collecting wagons from each individual siding and in transferring them to other sidings to pick up further wagons. For example, the wagons in siding XIII must be transferred into each of the other 12 sidings before being finally formed into a train. Because of these disadvantages, this method is considered suitable only where each of the trains to be formed is limited to three or four sections, and to avoid the need for continually transferring wagons from siding to siding during their collection, as described in phase 2 the French National Railways has been induced to develop methods which will avoid the need for such transfers.

Table 1 illustrates stage by stage the use which can be made of a geometrical series to facilitate shunting operations. In this instance two further groups or sections have been added to each of the four trains (Spades, Hearts, Diamonds and Clubs) making 15 sections in all. Four sorting sidings are sufficient for shunting the 15 sections. Four formation sidings are also required to assemble the trains (Spades, Hearts, Diamonds and Clubs) but, if required, sorting siding I may also be used as a formation siding for one of the four trains (e.g., Spades). For simplicity the prefix letters S.H.D.C. denoting particular trains have been omitted where groups of numbers denoting the sections are shown between brackets, thus in sorting siding III during the first phase, groups 4 and 12 are shown between brackets indicating that this siding contains all the wagons which comprise the fourth and twelfth sections of each of the four trains not necesarily in any particular order.

The first phase consists in pushing the wagons in random sequence over the hump and into one of the four sorting sidings selected according to the wagons' section numbers which are so arranged that the numbers in the sorting sidings will form a geometrical series. Thus in phase one by reading the section numbers downwards from siding I to IV as shown in Table 1, sections 1, 2, 4, 8; sections 3, 6, 12; and sections 5, 10; will each form geometrical series with a common multiplier of two (e.g. 1, 2, 4, 8, $=1 \times 2^0$, 1×2^1, 1×2^2, 1×2^3; 3, 6, 12 $=3 \times 2^0$, 3×2^1, 3×2^2; 5, 10$=5 \times 2^0$, 5×2^1).

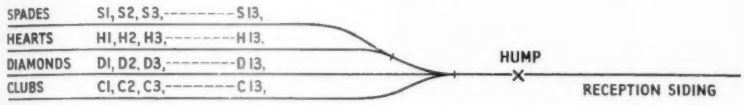


Fig. 4.—After humping second time, wagons grouped by trains in sorting sidings ready for departure

During the second phase, the wagons standing in sorting siding I (section numbers 1, 3, 5, 7, 9, 11, 13 and 15) are collected and again passed over the hump, this time being run into sorting sidings II, III or IV according to their particular section numbers in the manner illustrated by Table 1 or, in the case of those wagons which form the first section of each of the four trains (Spades, Hearts, Diamonds, and Clubs), run directly into their respective formation sidings. The third phase consists of collecting the wagons from sorting siding II (2, 6, 10, 14) (3, 7, 11, 15); these wagons are then run over the hump and into sorting sidings III or IV, or, in the case of sections 2 and 3, directly into their formation sidings.

In the fourth phase the wagons from sorting siding III are collected and passed over the hump and into siding IV or, in the case of section 4 to 7, into the formation sidings. The fifth and final phase will then consist of running the remainder of the wagons standing in sorting siding IV, sections 8 to 15, over the hump and into the formation sidings according to their trains so that the four trains will now contain all their wagons marshalled in sequence according to their sections.

The advantages of the geometrical series are that wagons do not have to be continually transferred between sidings until all sections are collected before hump shunting can take place. This was one of the disadvantages of the arithmetical series. Whilst the number of times the wagons on the sorting siding must pass the hump increases in an arithmetical series, the number of sections simultaneously shunted into their respective train formations increases in a geometrical series. This method requires only a limited number of sorting sidings. If productivity is defined, not as the number of wagons passing over the hump in unit time, but as the number of wagons which can be shunted simultaneously into both train and section order so that no further shunting of wagons is necessary at destination stations or private sidings, then it will be seen that the geometrical series is the most efficient because it enables this to be done with the fewest movements.

The disadvantages are that the length of the sorting sidings rapidly increases with the number of sections, and the wagons are hump shunted more often than in the case of an arithmetical series. For example, when it is necessary for trains to be divided into 15 sections, the geometrical series will require no less than five hump shunts. These disadvantages have induced the French National Railways to introduce a further method for purposes of hump shunting.

Table 2 illustrates stage by stage the use which can be made of a triangular progression in order to assist shunting operations. In this example, as with the geometrical series, two further sections, 14 and 15 have been added to each of the four trains (Spades, Hearts, Diamonds and Clubs) making a total of 15 sections

(*Continued on page* 593)

TABLE 1. GEOMETRICAL SERIES OF NUMBERS

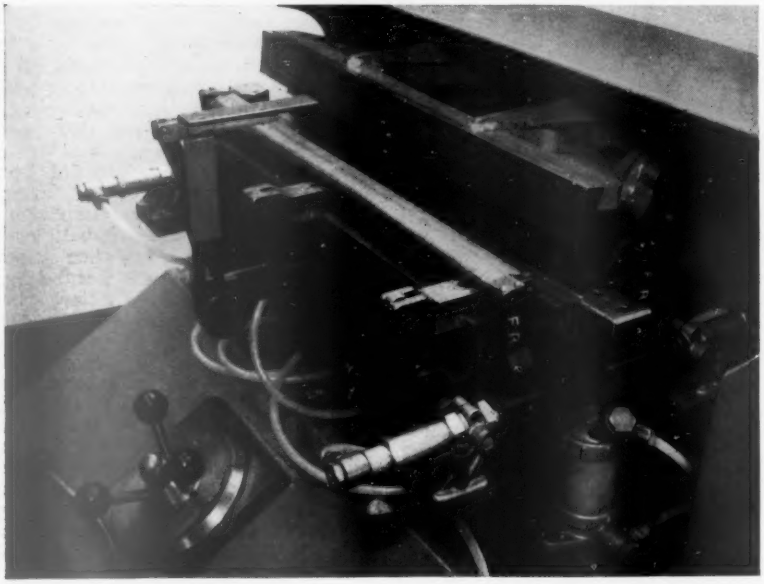
Siding	First Phase	Second Phase	Third Phase	Fourth Phase	Fifth Phase
Sorting					
I ...	(1, 3, 5, 7, 9, 11, 13, 15)	—	—	—	—
II ...	(2, 6, 10 14,)	+(3, 7, 11, 15,)	—	—	—
III ...	(4, 12,)	+(5, 13,)	+(6, 14,) (7, 15,)	—	—
IV ...	(8)	+(9)	+(10) (11)	+(12) (13) (14) (15)	—
Formation					
Spades	—	1	2, 3,	4, 5, 6, 7,	8, 9,—15
Hearts	—	1	2, 3,	4, 5, 6, 7,	8, 9,—15
Diamonds	—	1	2, 3,	4, 5, 6, 7,	8, 9,—15
Clubs	—	1	2, 3,	4, 5, 6, 7,	8, 9,—15

TABLE 2. TRIANGULAR SERIES OF NUMBERS

Siding	First Phase	Second Phase	Third Phase	Fourth Phase	Fifth Phase	Sixth Phase
I	(1, 3, 5, 8, 12)					
II ...	(2, 6, 9, 13)	(3)				
III ...	(4, 10, 14)	(5)	(6)			
IV ...	(7, 15)	(8)	(9)	(10)		
V ...	(11)	(12)	(13)	(14)	(15)	
Spades ...		1	2 3	4 5 6	7 8 9 10	11 12 13 14 15
Hearts ...		1	2 3	4 5 6	7 8 9 10	11 12 13 14 15
Diamonds		1	2 3	4 5 6	7 8 9 10	11 12 13 14 15
Clubs ...		1	2 3	4 5 6	7 8 9 10	11 12 13 14 15

Machine Application of Silicone Wrappers

Method of applying silicone insulating materials to traction motor conductors



Operating mechanism of wrapping machine, showing 12-position non-reversible rotary handle

THE London Transport Executive has designed and built a machine capable of carrying out automatically the process of wrapping the conductors of railway traction motors with silicone insulating materials. The machine has been installed at Acton Works and is working successfully.

The experimental work carried out by London Transport in the use of silicone materials for insulating railway traction motors was the subject of an article in our issue of April 11, 1958. Since then further progress has been made. Mention was then made of the decision to use a fully cured silicone elastomer impregnated glass wrapper instead of half-lapped layers of silicone elastomer glass tape coated with a pressure-sensitive silicone adhesive for the slot portion of the earth insulation.

It was realised at the onset that difficulty would be experienced in applying this silicone wrapper by hand, because this gave rise to an uneven wrap on the conductors and the possibility of becoming over-size when fitting the finished conductors in the slot. As a result, considerable work has been successfully carried out to design and build a machine which will perform the wrapping process automatically and this has now been working satisfactorily for some time.

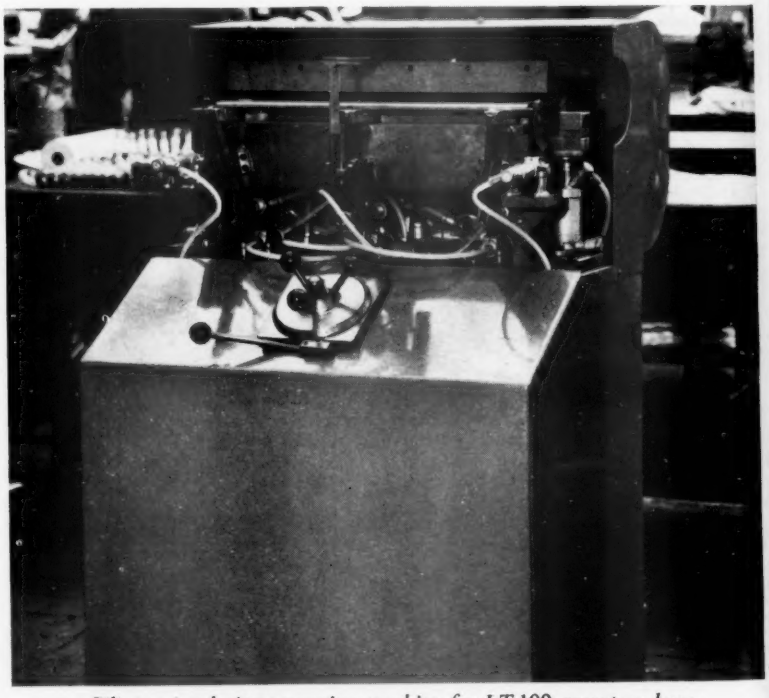
Operation of Machine

The wrapping machine is controlled by a system of cam-operated pneumatic valves, which function at an air pressure of 80 lb. per sq. in. These valves allow air to pass to cylinders, which, in turn, operate a series of slides and rams horizontally and vertically to envelop the conductors in the wrapper. They are operated in sequence by the movement of a 12-position non-reversible rotary handle, which is attached to the end of the cam-shaft.

The sequence of operations illustrated in the accompanying diagram is as follows: 1 and 2, the conductors are placed on a strip of the silicone wrapping material and positioned by horizontal and vertical rams; 3, the horizontal rams are removed; 4, two slides move up the sides of the conductors enfolding the wrapper on three sides; 5, the vertical ram is removed from the top of the conductors; 6 and 7, horizontal movement of a slide folds one end of the wrapper over the top of the conductors; 8 and 9, horizontal movement of a slide from the other direction folds the other end of the wrapper over the top of the conductors and forms a lapped joint; 10, the vertical ram descends on to the top of the armature bar and consolidates the join in the wrapper; 11, the slides up the sides move away vertically; 12, the vertical ram on the top of the armature bar moves away. The wrapped armature bar is then removed from the machine for the final taping with white glass tape.

Silicone Adhesive

Several difficulties were encountered in the development of this technique. The main problem was the finding of a suitable silicone adhesive to retain the wrapper in position on the conductors until the final taping had been carried out. Several adhesives were tried but either the adhesive qualities were unsatisfactory or difficulties were found in applying the adhesive to the wrapper by hand. Subsequently, a satisfactory material



Silicone insulation wrapping machine for LT.100 armature bars

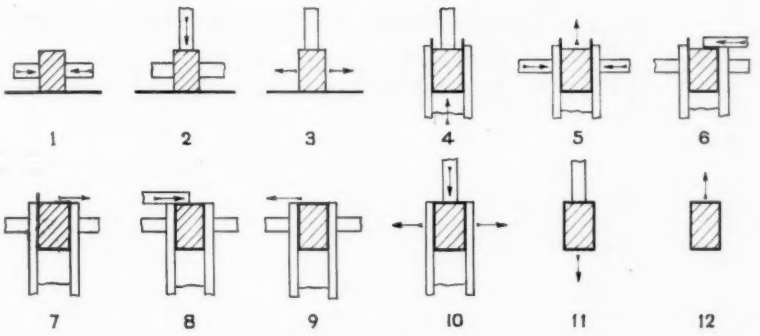
which has been precoated with a silicone adhesive of the pressure-sensitive variety was produced by H. D. Symons & Co. Ltd., and work is proceeding using this material.

Traction Motor Tests

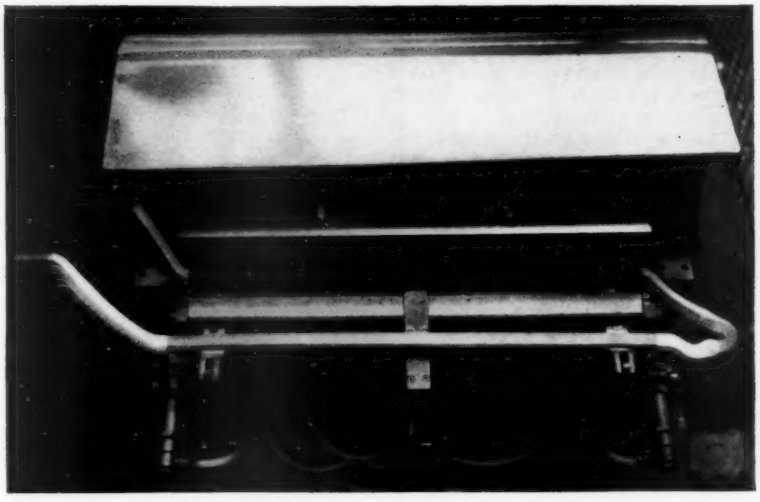
The motor selected for tests with silicone insulating materials was the LT.100 type designed in 1938 and fitted to the 1938 tube rolling stock. It is basically similar to the latest type of traction motor and was chosen because of the large number in service. The motor is a 168-h.p. (one-hr. rating) 600-V. four-pole machine. It has 31 armature slots, five conductors to each slot, and is wave wound. The armature slot space factor is higher in this motor than in any other in service on London Transport railways, and this fact ensured that, if silicone insulating materials were satisfactory on this type of motor, it would be possible to use them on other motors with a lower armature slot space factor.

Motors are now being placed in service insulated in this manner and a close watch will be kept on the performance of them to determine the additional life span to be expected from this method of insulation using silicone materials.

The wrapping machine was developed, and the tests with silicone insulating materials are being carried out, under the direction of Mr. A. W. Manser, Chief Mechanical Engineer (Railways), London Transport Executive.



Sequence of operations of silicone wrapping machine



Motor armature bar in position after completion of the wrapping cycle

Teaching Simultaneous Marshalling

(*Concluded from page* 591)

in respect of each train. Five sorting sidings are required for the 15 sections, with four formation sidings in which the trains are to be assembled prior to departure. Sorting siding I may, if necessary, be used also as a formation siding for one of the four trains. For simplicity, the prefix letters S.H.D.C. denoting the particular trains have again been omitted where groups of numbers indicating sections are shown between brackets.

During the first phase, the trains are run over the hump from the reception siding and into the sorting sidings, I, II, III, IV or V, according to their section numbers, the particular siding being determined by means of a triangular series of numbers so that upon completion of the first phase, the section numbers of each group of wagons standing in the sorting sidings are arranged in a triangular series, 1, 2, 4, 7, 11. After the first phase of shunting has taken place, the second and subsequent phases follow in the manner shown by Table 2, the wagons in each phase being passed over the hump and into their appropriate sorting or formation siding.

As with a geometrical series no transferring of wagons between sidings is required before further hump shunting can take place. Whilst the number of times the wagons on the sorting siding must pass over the hump increases in an arithmetical progression, the aggregate number of sections simultaneously shunted in the train formation siding increases in a triangular series:—

Number of hump shunts required	2	3	4	5	6	Arithmetical series
Aggregate number of sections assembled in train formation ...	1	3	6	10	15	Triangular series

Only a limited number of sorting sidings are needed, although the number required is slightly higher than in the case of a geometrical series; for example, when 15 sections have to be marshalled, as in Table 2, one more siding is required if the triangular series is used. The wagons of sections 1, 2, 4, 7 and 11 are only shunted twice and the remaining sections three times whereas using a geometrical series more shunts per section are necessary, for example, the wagons of section 15 must be shunted five times. When trains have to be divided into seven or more sections, the maximum number of sections in any one siding is less than if a geometrical series is used.

With this method more hump shunts are necessary than in the case of either an arithmetical or a geometrical series, and sorting sidings must be of sufficient length to accommodate the wagons of more than one section, and must, therefore, be longer than when an arithmetical series is employed.

With the aid of playing-cards it is, thus possible to illustrate methods by which the productivity of shunting in hump yards can be increased by the simultaneous marshalling of wagons into both section and train order. In this way shunting operations at destination stations can be avoided.

CLOSURE OF ORWELL STATION—British Railways, Eastern Region, announces that Orwell Station, on the Ipswich-Felixstowe branch, is to be closed for all traffic from June 15. Facilities for passengers will be available by existing bus services operating in the area. A collection and delivery service for parcels and sundries traffic will continue to be available and the existing facilities for goods and parcels traffic will remain at Ipswich and Derby Road Stations.

Automatic Regulation of Train Running

Tests in U.S.S.R. with automatic driver, using computer to regulate electric train running from minute to minute

MUCH has been heard of the possibility of introducing some degree of automaticity into the driving of trains, now that electric working is so widespread. Purely automatic operation has long been known where, as on the Post Office London Railway, the conditions are comparatively simple and especially favourable to such working. Russian engineers have been giving special attention to the problems involved, more particularly with the object of obtaining a saving in energy combined with an increase in track capacity. Some details of what has been accomplished have been published in *Jeleznodorojni Transport*.

The principle is expressed in the accompanying diagram of the elements composing it and consists in feeding into an electronic computer four sets of information covering: (*a*) weight and resistance of the train; (*b*) tractive effort as a function of the speed and gradients, etc., at each moment; (*c*) the actual characteristics of the line, with permanent speed restrictions and so on; and (*d*) any variable essential information such as weather conditions, adverse signals and temporary speed restrictions.

Using these factors the computer solves a differential equation and the result, involving a series of variables, is compared with a theoretical economic run corresponding to the timetable, giving optimum values for certain parameters relating to say, the correct controller running notch, reduction in brake pipe pressure and so on. The equipment then issues a control signal adapted to setting up the conditions conforming precisely to the situation ruling at the moment. It was designed under the direction of an engineer named Nikolaev and tried first on a multiple-unit train and then in more developed form on an electric locomotive.

Method of Functioning

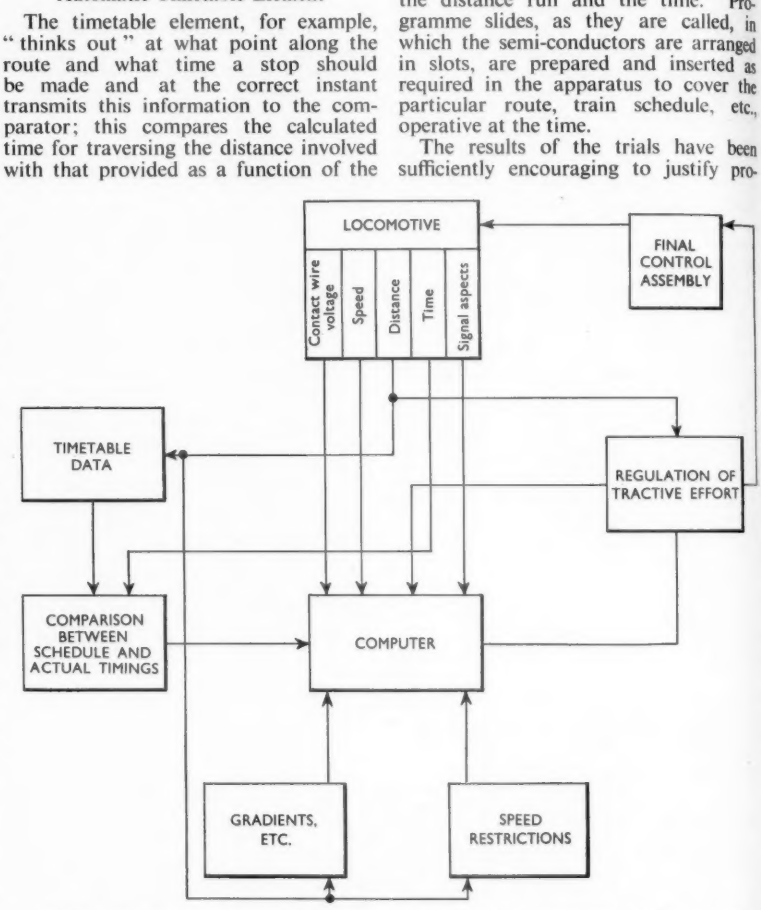
To perform its function correctly the computer must receive continuously information covering the speed, position of the train, characteristics of the line, value of the tractive effort, contact line voltage, temperature of motor windings, and so on.

It is desirable as well to provide a working schedule arrived at on the basis of the traction characteristics which necessarily takes into account the running time over the various sections, speed called for at the end of each, stopping points and permanent speed restrictions. An adverse signal forms an instruction to regulate the speed in conformity with its aspect.

The ultimate effect is to select such tractive effort conditions as will enable the train to arrive at the end of the run at the time fixed by the programme and it does so by comparing such time with that arrived at by solving the equation. The equipment consists of four main items, namely, receiving elements, recording from instant to instant the variable factors; the "programme" equipment; the computer itself; and the apparatus which is required to control the locomotive.

Automatic Timetable Element

The timetable element, for example, "thinks out" at what point along the route and what time a stop should be made and at the correct instant transmits this information to the comparator; this compares the calculated time for traversing the distance involved with that provided as a function of the data furnished by the computer for doing so under the conditions actually obtaining. The required tractive effort is then selected, with the precise moment when it shall become applied. This information is then passed to the appropriate driving controls so as to operate them correctly. The circuits are formed with ferro-magnetic elements eliminating all contacts and no valves or any moving components are used.



Schematic diagram showing the items used for the automatic driver system and their inter-relations

Degree of Accuracy

The accuracy of the working necessarily must depend on that of the information regarding speed, distance run, time, etc., being fed into the apparatus. It was found, for instance, that a standard type speedometer was not good enough, and a frequency type device working as a function of the r.p.m. of an axle had to be used.

This uses a light beam acting on a photo-electric cell through holes in a shutter revolving concentrically with the axle, and like equipment is used to record the distance run and the time. Programme slides, as they are called, in which the semi-conductors are arranged in slots, are prepared and inserted as required in the apparatus to cover the particular route, train schedule, etc., operative at the time.

The results of the trials have been sufficiently encouraging to justify proceeding with regular production of service equipment, to be adapted to both diesel and electric working. It is thought that it will enable 5-7 per cent of power to be saved with an increase of traffic of some 12-15 per cent on lines worked on this system, which does not necessitate extensive alterations to the locomotives concerned.

It does not of course dispense with the driver, but reduces his task to looking ahead, for there remains always the risk of something unusual occurring, and exercising supervision over the working of the train.

He starts the train by pressing a button and thereafter the "robot" takes charge, but he is available at all times should some special circumstances require him to take over the driving.

Use, Distribution and Control of Wagons

Procedure on British Railways to obtain maximum economy: demurrage charges: the problem of special-type wagons

(*By a correspondent*)

IN one recent year, British Railways purchased over 33,000 all-steel, 16-ton coal wagons. If the value of such a wagon is taken as £530, over £17 million was spent on one type of wagon in that year. Proposals to fit all wagons with automatic brakes are estimated to cost an initial outlay of not less than £125 million and increase annual charges by a further £9 million. The fitting of automatic couplings, which is a logical sequence will prove as great, if not a greater, expense.

It follows that the British Transport Commission will make every effort to get the most effective and economic use out of equipment which represents such a large proportion of recent capital outlay, and of running costs in maintenance and depreciation.

The use of freight rolling stock may be analysed as: (*a*) Running loaded; (*b*) awaiting discharge; and (*c*) returning empty for re-loading. Introduction of faster, fitted goods trains will reduce the loaded running time, and the fact that the wagon is loaded adds urgency to the transit in the eyes of the operator.

Demurrage

A revised scheme of demurrage charges which is being introduced in stages shows the consideration which the Commission has given to the problem. To take the ordinary coal wagon as an example, the charges are: (1) until January 5, 1958, 3s. a day after expiry of free period; (2) from January 5, 1958, to January 6, 1961, 5s. a day for first two days after expiry of free period and 10s. a day thereafter; and (3) from January 7, 1961, onwards, 9s. a day for first two days after expiry of free period and 18s. a day thereafter.

These charges still represent good value for money. The "warehousing" feature is one of the advantages that rail can offer over road. The arrival and necessary unloading of a road vehicle at some inopportune time can result in much inconvenience and sometimes in additional expense. Exploiting this natural advantage, railway managements have never rigidly enforced demurrage charges. Requests from traders for relief in special circumstances always receive sympathetic consideration from district officers. At the same time, traders are not encouraged to hold wagons unnecessarily, and the system of rolling stock control is designed so that a close watch can be kept on terminal discharge time.

Control and Distribution

Once a wagon is empty, the sooner it can be loaded again and earning revenue, and the shorter and quicker the light running, the better. This was soon realised by railway operators, who saw that some central control was needed. Within four months of the grouping of the railways in January, 1923, the London & North Eastern Railway had established a system of central wagon control. After nationalisation the Railway Executive introduced a standard system for British Railways in October, 1950.

The basis of the system used on British Railways is a daily census of all wagons, according to type and state of load, taken at all stations and yards at 10 a.m. daily.

The details are entered on a freight rolling stock return (Fig. 1) which is divided into two main sections. Section A, which is a record of stock, receipts and forwardings, and Section B, a calculated estimate of spare wagons or additional ones required. The figures on Section B are telephoned to the district control office before 12 noon on that day. The details are compiled separately for each type of wagon. The district control office then gives instructions for the disposal of surplus vehicles or makes arrangements for requirements to be met from another station. The interchange or use of wagons without control authority is forbidden.

B.R. 87240/1

BRITISH RAILWAYS.....REGION

DAILY FREIGHT ROLLING STOCK RETURN

From.....Station

Date.....19.....

TERMINAL No..... FORM A (SMALL)

TO BE USED WHEN TELEGRAPHING SECTION B.

Prefix	Code time	No. of words

Station and instructions from	Time received	Clerk
Station and instructions to	**Time forwarded**	**Clerk**

SECTION A														SECTION B					
STATEMENT OF WAGONS, SHEETS AND ROPES ON HAND, RECEIVED AND FORWARDED																			
ON HAND at 10 a.m. yesterday			RECEIVED since 10 a.m. yesterday			FORWARDED since 10 a.m yesterday			ON HAND at 10 a.m. to-day			Inwards Loaded Discharged	†	TYPE OF STOCK (To be inserted)	Code	Inward Loaded on hand at 10 a.m.	Total required for loading tomorrow	Empty on hand at 10 a.m. to-day available for immediate distribution or loading tomorrow	Inward Loaded on hand and expected to arrive anticipated to be available for loading next day or for distribution same day or next morning	Wanted additional for loading tomorrow	To spare
Loaded (Inward & Outward)	Empty	Total	Loaded	Empty	Total	Loaded	Empty	Total	Loaded (Inward & Outward)	Empty	Total	Since 10 a.m. yesterday									
1	2	3	4	5	6	7	8	9	10	11	12	13	14			L.	R.	E.	U.	W.	S.
														OPEN							

Fig. 1.—Daily freight rolling stock return, British Railways

A summarised report is prepared in the district control office, which shows a district "spare" or "wanted additional" figure. This is transmitted by each district to Regional headquarters.

The district reports are summarised, and inter-district movements are ordered as required. After these have been arranged, the overall position is reported to the B.T.C. Rolling Stock Control. This body balances requirements between the Regions.

Supervision

The whole system depends on prompt and accurate information, and intelligent estimates being submitted by stations. A check is maintained by the use of three simple calculations.

A weekly summary of the wagon returns is compiled by each station (Fig. 2), and from the totals are calculated: (*a*) terminal discharge time; (*b*) terminal user time; and (*c*) percentage of forwarded wagons loaded to number shown as required. If any of these is excessive

BRITISH RAILWAYS _____ REGION

WEEKLY SUMMARY OF WAGONS, SHEETS AND ROPES ON HAND, DISCHARGED, FORWARDED AND REQUIRED.

Station or Works _____

GROUP 1—OPEN WAGONS

Columns on FORM "A"	Inward Loaded		On Hand at 10.0 a.m.			Forwarded following 24 hours			Total shown as "REQUIRED" in Column "R" of Freight Stock Return previous
	On Hand 10.0 a.m. L	Discharged following 24 hrs. 13	Loaded 10	Empty 11	Total 12	Loaded 7	Empty 8	Total 9	R
Saturday									Friday
Monday									Saturday
Tuesday									Monday
Wednesday									Tuesday
Thursday									Wednesday
Friday									Thursday
TOTAL									TOTAL

‡ Terminal discharge time _____ * Terminal user time _____ † Percentage forwarded loaded to total number required _____

Fig. 2.—Weekly summary of daily rolling stock return

an explanation is required, and investigations are then made by the district office.

It is usual to appoint district freight rolling stock inspectors, who cover a defined district, giving advice and assistance and making spot checks of returns and actual yard stock at stations.

Certain special types of wagons are controlled independently by the Regional office and instructions given after each loaded journey for the destination of the empty wagon. Other wagons may be stencilled for return to a particular station where a regular flow of a certain type of traffic exists from that station to various parts of the country. In some instances special wagons may be used only between two points. Wagons needed for seasonal traffic, such as fruit vans, may, at off-season periods, be used for other traffic.

A similar procedure is adopted in controlling the use and distribution of containers and sheets and ropes.

Future Developments

There is at the moment much demand for wagons for specialised traffics, such as shock absorber wagons, pallet vans, and low-sided wagons for containers. Traffic officers state that they can increase traffics and revenue by the use of such vehicles, but there must be an economic basis for their purchase. Once wagons are purchased they must be put to the most intensive use to justify the capital expenditure. Efficiency in distribution is encouraged if stations' requirements are supplied promptly and adequately. Investigation should be made of failures in this respect. Otherwise lack of confidence in the system results in deliberate over-estimation of requirements, or the "hiding" of surplus vehicles. A more efficient check at stations, by making full use of station records, could counteract this tendency.

The enhanced freedom of the new Charges Scheme may provide a means at some future date, of quoting more attractive rates between points where there are regular flows of empty wagons, but in most cases of this kind there is little suitable traffic available, and care must be taken to avoid reaction on other traffics.

CANADIAN PACIFIC RAILWAY REGIONAL REORGANISATION.—Mr. N. R. Crump, President of the Canadian Pacific Railway Company, announces that a reorganisation of territorial administration of the railway will take place on July 1, when the present three Regions will be replaced by four, having 32 operating divisions and reporting to system headquarters Montreal. The four Regions will be the Atlantic, the Eastern, the Prairie, and the Pacific. The Atlantic Region, with headquarters in Montreal, will consist of lines eastwards from Ottawa to the Atlantic Coast including the Quebec Central Railway, the Dominion Atlantic Railway, and the Bay of Fundy steamship service. The Eastern Region, the headquarters of which will be in Toronto, will embrace lines west of Ottawa to the Lakehead and the Great Lakes Steamship Service. The area of the Prairie Region, with headquarters in Winnipeg, will be from west of the Lakehead to approximately the Saskatchewan-Alberta border. The Pacific Region will contain the territory west of the Saskatchewan-Alberta border to the Pacific coast including the British Columbia coast steamship service, the B.C. lake and river services and the Esquimalt & Nanaimo Railway on Vancouver Island. The headquarters will be in Vancouver.

EXPANSION OF INDUSTRIAL TRAINING.—From a report by the Industrial Education and Training Committee of the British Employers' Confederation it is concluded that absorption by industry of young workers during the next few years will be achieved only if employers arrange their training budgets on the basis of wide and continuing expansion. The report states that failure to build up a trained labour force adequate to meet economic expansion will be much more damaging than any possible temporary surplus of skilled labour. In September, 1958, when unemployment in Great Britain was nearly half a million workers, there were still many skilled occupations in which the number of unfilled vacancies exceeded the number of persons available to fill them. An increase in industrial activity may well re-create similar pressures unless steps are taken now to establish a better balance between skilled jobs and workers trained to fill them. The increase in school-leavers over the next few years provides the opportunity to do this.

DEXION LIMITED BUILDING EXHIBITION.—Mr. John Rodgers, Parliamentary Secretary to the Board of Trade, will open a Dexion Building Products Exhibition at Stonebridge Park, Wembley, on May 26. The Exhibition will show, for the first time, the Dexion low-cost building system for overseas; Dexion Multi-purpose Grid; Tecon timber roof trusses; galvanised Dexion, and a new range of Undulite reinforced plastic sheeting. Among other products on view will be Dexion Glidewheel systems; Viadex cable tray; Cookson sheeting; Fulbora rainwater outlet; and the Glitsa Floor Seal. There will also be specially large Dexion constructions displaying the adaptability of the firm's chief product.

RAILWAY NEWS SECTION

PERSONAL

Mr. M. A. Bary, B.Sc., B.Eng., General Manager, Eastern Bengal Railway, who, as recorded in our March 13 issue, has retired, has also relinquished his appointment as General Manager (Port) & Chairman of the Port Commissioners, Chittagong. Mr. Bary was born in 1903, and educated at the Presidency College, Calcutta, and the Bengal Engineering College, Sibpur. He joined the Indian Railways, in 1927, and became a Probationary Assistant Executive Engineer, Great Indian Peninsula Railway, in 1928. In 1933, he was transferred to the Eastern Bengal Railway. Early in the 1939-45 war Mr. Bary was Controller of Food Supply, Bengal Assam Railway, in 1943 he became Track Supply Officer, and in 1945, Executive Engineer. On partition, Mr. Bary was appointed Deputy Chief Engineer, Eastern Bengal Railway, later becoming Deputy General Manager. In 1950 he was promoted to be Chief Engineer in charge of the development works, Port of Chittagong. In 1952, on the separation of the administration of the Port of Chittagong from that of the Eastern Bengal Railway, he was appointed General Manager, Chittagong Port, & Chairman of the Port Commissioners. Mr. Bary represented the Pakistan Government at the Conference of Inland Transport Experts, E.C.A.F.E., in 1949, and 1956. In addition to his official duties, he was Chairman of the Eastern Bengal Railway Co-operative Credit Society Limited, and Chairman of the Railwaymen's Stores Limited. In 1957 he was a member of the delegation to the U.S.A. which negotiated the second loan, from the World Bank, for the development of railways in Pakistan. Mr. Bary presided over the Annual Convention of the Institution of Engineers, Pakistan, at Dacca, in 1953. He was President of the Chittagong Rotary Club (Rotary International) for 1954-55. He acted as General Manager of the Eastern Bengal Railway for two months, in 1952, and for three months, in 1955, in addition to his duties as General Manager (Port), & Chairman of the Commissioners for the Port, the appointments being confirmed in September, 1955. In 1957, Mr. Bary was appointed General Manager, Eastern Bengal Railway. From October, 1958, he again held the position of General Manager, Chittagong Port Trust, & Chairman, Port Commissioners, in addition to his E.B.R. appointment.

Mr. M. A. Bary
General Mana ger, Eastern Bengal Railway, who has retired

Mr. I. A. Abbasi
Appointed General Manager of the Eastern Bengal Railway

Sir John Elliot, who is retiring from the chairmanship of the London Transport Executive at the end of June, has been elected Chairman of Thos. Cook & Son Ltd., and its subsidiaries and of the Pullman Car Company from July 1. He joined Cook's board at the beginning of this year and that of the Pullman Car Co. Ltd. in February. Sir John Elliot will succeed Mr. Stanley Adams, who has for some time sought to be relieved of some of his business commitments. The British Transport Commission, the parent of the companies, has agreed to his request to retire from June 30. Mr. Charles Holt, Director & General Manager of Thos. Cook & Co. Ltd., has been appointed Managing Director from July 1.

Mr. I. A. Abbasi, Chief Operating Superintendent, North Western Railway of Pakistan, who, as recorded in our March 13 issue has been appointed General Manager, Eastern Bengal Railway; General Manager, Port (Railway), and Chairman, Chittagong Port Commissioners, studied at Allahabad and Aligarh Universities, and graduated from Thomson Civil Engineering College, Roorkee. Mr. Abbasi joined the Superior Revenue Establishment, Indian State Railways, and was posted to the Eastern Bengal Railway, as Assistant District Traffic Superintendent, in 1930. He was promoted to the Senior Scale, in 1937, and served as District Traffic Superintendent, Personnel Officer, Superintendent Transportation, Research Officer, Superintendent Claims, and Welfare Officer, before being posted, as Chairman, Staff Resettlement Board, in 1945. During the 1939-45 war, he was granted an emergency commission, and was promoted to the rank of Major, in 1942. In 1947, he entered the junior administrative grade and, after Partition, acted as Deputy Chief Traffic Manager, and Chief Traffic Manager, Eastern Bengal Railway, Chittagong. In 1948, Mr. Abbasi was transferred to the Railway Division, Ministry of Communications, Karachi, as Joint Director, Traffic. In 1949, he served as Secretary, Eastern Bengal Railway Inquiry Committee. In 1950, he became Director, Traffic. In 1951 he went to the U.S.A., to negotiate a loan with the World Bank for the Pakistan Railways. After acting as Director General Railways, he became, in 1952, Chief Operating Superintendent, North Western Railway.

Mr. D. M. Robbertze
Deputy General Manager, South African Railways, 1954-59

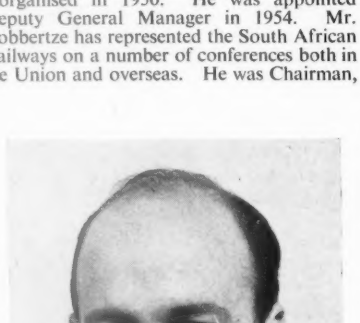
Mr. J. P. Hugo
Appointed Deputy General Manager, South African Railways

Mr. S. E. Quicke
Motive Power Superintendent, Rhodesia Railways, 1956-59

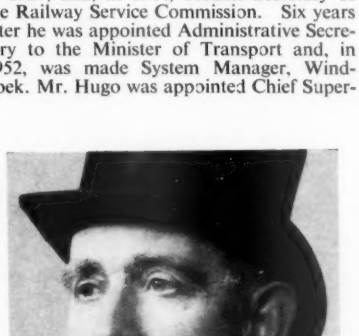
Mr. D. M. Robbertze, Deputy General Manager, South African Railways, who as recorded in our April 24 issue, has retired, joined the railways in 1913. When the Tourist Branch of the Publicity & Travel Department was established, in 1927, he was one of the original staff, and was appointed Tourist Representative in London, in 1929. After five years in London, he was attached for a time to the office of the Minister of Railways, Pretoria, subsequently returning to the Publicity & Travel Department, of which he became Manager in 1937. He was made Chief Rates Officer, Railway Headquarters in 1942, Chief Manager (Industrial & Commercial), in 1945, and was appointed Assistant General Manager (Commercial) when the managerial side of the railways was reorganised in 1950. He was appointed Deputy General Manager in 1954. Mr. Robbertze has represented the South African Railways on a number of conferences both in the Union and overseas. He was Chairman, for five years, of the Railway Conciliation Board, and was a foundation member of the board of the Tourist Corporation. He was closely connected, on the commercial side, with the direction of South African Airways and has represented the Airways at some important conferences in South Africa and overseas. In October last year Mr. Robbertze was made a member of the Commission enquiring into the rating structure on the Rhodesian Railways.

Mr. J. P. Hugo, M.Inst.T., Assistant General Manager (Staff), South African Railways, who, as recorded in our April 24 issue, has been appointed Deputy General Manager, is 51. He joined the railway service in 1927, and, in 1944, became Secretary of the Railway Service Commission. Six years later he was appointed Administrative Secretary to the Minister of Transport and, in 1952, was made System Manager, Windhoek. Mr. Hugo was appointed Chief Superintendent (Staff) at Railway Headquarters, Johannesburg, in 1954, and a few months later became Assistant General Manager (Staff).

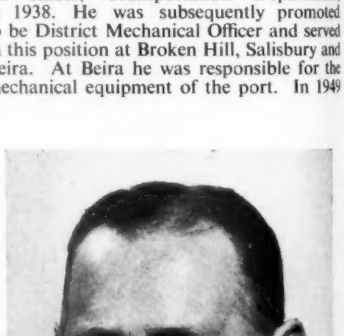
Mr. S. E. Quicke, Motive Power Superintendent, Rhodesia Railways, who, as recorded in our April 3 issue, has retired, was born at Gillingham, Kent. He went to Rhodesia, in 1913, where he was educated at St. George's College at Bulawayo. Mr. Quicke received practical and technical training on Rhodesia Railways at Umtali and Bulawayo and gained further experience in the Union of South Africa. He returned to the Rhodesia Railways, in 1925, as a junior draughtsman, and was appointed a mechanical officer, Transportation Department, in 1938. He was subsequently promoted to be District Mechanical Officer and served in this position at Broken Hill, Salisbury and Beira. At Beira he was responsible for the mechanical equipment of the port. In 1949



Mr. G. R. Evans
Appointed Commercial Superintendent, Continental Department, Eastern Region



Mr. G. Smith
Appointed Stationmaster, Glasgow Central, Scottish Region



Mr. V. G. Reitz
Catering Manager, South African Railways, 1955-59

he was appointed Mechanical Superintendent, Chief Mechanical Engineer's Department, in charge of all running sheds. Mr. Quicke became Motive Power Superintendent, in 1956, when, locomotive sheds and carriage and wagon depots passed back to the control of the Chief Superintendent of transportation.

Mr. G. R. Evans, General Assistant to the Assistant General Manager (Traffic), Eastern Region, British Railways, who, as recorded in our May 15 issue, has been appointed to a newly-created position of Commercial Superintendent in the Department of the Continental Traffic & Shipping Manager, took an honours degree in Classics at Cambridge University. Mr. Evans later joined the Staff Department, London Transport Executive. He was for three years Personal Assistant to the Chairman and attended a course at the Administrative Staff College, Henley. In 1955 he was appointed Assistant Principal Officer (Administration), British Transport Commission, and, in 1957, General Assistant to the Assistant General Manager (Traffic). During the war he served in the R.N.V.R.

Mr. G. Smith, Stationmaster, Glasgow Queen Street, who, as recorded in our May 15 issue, has been appointed Stationmaster, Glasgow Central, joined the former North British Railway as a junior clerk at Lindores, Fife, in 1912. Mr. Smith subsequently served as a clerk at various stations; as Stationmaster at Lindores, Charlestown and Luthrie; as Station Inspector at Dundee, Tay Bridge, and as a relief clerk in the Burntisland District. He was appointed Stationmaster at Cardenden, in 1943; at St. Andrews, in 1946; at Dundee West, in 1949; at Haymarket, Edinburgh, in 1951, and at Cowlairs later in the same year. He went to Kirkcaldy in 1954, and was appointed Stationmaster, Glasgow, Queen Street in 1956.

Mr. V. G. Reitz, Catering Manager, South African Railways, who, as recorded in our May 15 issue has retired, is 63. Mr. Reitz joined the railways as a junior clerk in 1914, and became Supervisor, Refreshment Rooms & Dining Cars, Braamfontein, in 1937. He was appointed Superintendent (Catering) in 1941, and Assistant Catering Manager in 1943. He was promoted Catering Manager, in succession to Mr. F. C. Wilter, in 1955.

Mr. E. N. A. Moss, Chief Inspector, Engineering Inspection Office, Sheffield, Messrs. Livesey & Henderson, has retired after 39 years' service. He will be succeeded by Mr. J. L. Brighton, Assistant Chief Inspector, of the Middlesbrough Office.

South African Committee on Railway Manufacturers

The South African Minister of Transport has appointed a committee to enquire into the manufacture of railway requirements by private industry. The chairman of the committee is Mr. G. J. van Zyl, an engineer and businessman in Cape Town, and the members are Mr. G. J. F. van der Merwe, President of the Afrikaanse Handelsinstituut; Mr. V. R. Atkinson, former President of the Federated Chambers of Industries; Dr. R. Gaigher, Industrial Adviser, Department of Commerce & Industries; Mr. J. P. Laurens, Assistant General Manager (Finance & Planning), South African Railways; Mr. F. Jackson, Assistant Chief Civil Engineer (Maintenance), South African Railways; Mr. N. Bestbier, Assistant Chief Mechanical Engineer (Design & Development), South African Railways, and Mr. A. J. G. Gosling, Inspecting Engineer (Electrical) (New Works), South African Railways. Mr. A. L. Weideman is Secretary.

Mr. C. R. Lovatt, Chief Signal & Electrical Engineer, New Zealand Government Railways, has resigned after 38 years' service.

Mr. J. P. Laurens, Chief Officer, Planning, Co-ordinating & Research, South African Railways, has been re-designated Assistant General Manager, Finance & Planning. In addition to planning, co-ordination and research, Mr. Laurens has taken control of the Financial Section, and the internal auditing on all systems and departments. Mr. J. G. Grové, Assistant General Manager, Commercial, has been re-designated Assistant General Manager, Airways, Publicity & Catering. He will be responsible for all matters affecting South African Airways, including airways rates, and for the control of the Catering Department and the Publicity & Travel Department. Mr. P. G. Joubert, Assistant General Manager, Road Transport & Special Duties, has been re-designated Assistant General Manager, Commercial & Road Transport. This change in organisation follows the retirement, recorded in our April 24 issue, of Mr. D. M. Robbertze, Deputy General Manager, South African Railways.

Mr. L. G. Burleigh, Transport Officer, I.C.I. Limited, has retired. He has been succeeded as Transport Officer by Mr. J. A. McMullen, O.B.E. Mr. McMullen served on the London Midland & Scottish Railway as a Traffic Apprentice, and spent a year with the Pennsylvania Railroad in America. Subsequently, he toured North American Universities lecturing on transport subjects, returning to the United Kingdom in 1938. He later became Assistant Controller, Lancaster, and in 1945, was appointed Passenger Assistant to the District Goods & Passenger Manager, Bristol. During the 1939-45 war, he served in the Royal Signals (Railway Telegraphs) and, later, the Royal Engineers (Transportation), in France, the Middle East, Belgium and Germany, where he was Assistant Director of Transportation (Railway Operating), 21 Army Group.

L.M.R. Appointments

The following staff appointments have been announced by London Midland Region, British Railways :—

Mr. J. Pollard as Assistant Divisional Traffic Manager, Birmingham.

Mr. J. H. Hambidge as District Operating Superintendent, Birmingham (New Street).

Mr. F. J. Burge as District Operating Superintendent, Derby.

Mr. T. W. Royle as District Operating Superintendent, Rugby.

Mr. H. Bullough as District Commercial Manager, Derby.

Mr. J. J. C. Barker-Wyatt as Works Manager, Locomotive Works, Gorton.

Mr. T. Lower as Staff Assistant, Chief Mechanical & Electrical Engineer's Department, Derby.

Mr. G. E. J. Monson as Assistant Road Motor Engineer, Euston.

The following other appointments have also been announced by that region :—

Mr. C. L. Kelly as Assistant (General) to Line Traffic Officer (Motive Power), Crewe.

Mr. G. P. Bull as Assistant to District Engineer (Permanent Way), Lancaster.

Mr. R. Wilson as Marine Engineer, Holyhead.

Mr. W. J. H. Stanier as Assistant (General) to Line Traffic Officer (Motive Power), Derby.

Mr. J. Dearden as Superintendent, Senior Principal Scientific Officer, Metallurgy Division, Research Department, Derby.

Mr. J. Marsh as Assistant to District Goods Manager (Operating), Liverpool.

Mr. W. Brownlee as Assistant District Operating Superintendent, London (W).

Sir William Sinclair, Director of Dunlop Rubber Co. (Scotland) Ltd., who retires on January 31, 1960, will relinquish his executive duties at the end of this year. He will be succeeded by Mr. Denis Hays, Sales Manager, General Sales Division, Fort Dunlop.

Mr. A. E. Record, Staff Assistant to the Chief Mechanical & Electrical Engineer, Derby, London Midland Region, British Railways, has retired after 45 years of service in the Staff Department of the Chief Mechanical Engineer's and, subsequently, the Chief Mechanical & Electrical Engineer's Departments. Mr. Record was Chairman of the Staff Sub-Committee of the Mechanical Engineering Committee of British Railways and Secretary of the Outstation Wagon Shops Piecework Committee. He also was a member of the management side of Sectional Councils Nos. 1 and 3, and of the management side of the Workshop Supervisory Staff Line Committee and the Professional & Technical Staff Line Committee. Presentations made to Mr. Record included one by Mr. A. E. Robson, Chief Mechanical & Electrical Engineer, on behalf of the management.

Mr. H. G. Bowles, Assistant General Manager, Western Region, British Railways, has been appointed a director of the Devon General Omnibus & Touring Co. Ltd. Mr. K. W. C. Grand has resigned from the board.

Mr. E. A. Talbot, District Motive Power Superintendent, Saltley, London Midland Region, British Railways, has been appointed District Motive Power Superintendent, Birmingham, London Midland Region.

Mr. A. V. Bond and Mr. D. F. Pelle, Senior Executive Assistants, Architect's Department, London Transport Executive, have been promoted to be Principal Executive Assistants. Mr. Bond will be responsible to the Architect for all special construction arising in the work of the Department. He joined the Architect's Office of the Underground Group in 1913. He is an Associate Member of the Institution of Structural Engineers. Mr. Pelle will be responsible to the Architect for the Quantity Surveying Section and for all administrative matters of a financial character within the Department. He joined the Architect's Office of the Underground Group in 1929. Mr. Pelle is a Fellow of the Royal Institution of Chartered Surveyors.

B.R.S. Appointments

The following appointments are announced by British Road Services :—

Mr. J. H. Webster, Divisional Accountant, South Eastern Division, as Divisional Stores Officer, South Eastern Division, succeeding Mr. B. W. Tyler, who has retired.

Mr. E. Moffatt, Assistant Divisional Accountant, Pickfords Division, as Divisional Accountant, South Eastern Division, with effect from April 27, 1959.

Southern Region Appointments.

The following appointments have been announced by the Southern Region, British Railways :—

Mr. H. W. F. Rudkin, Staff Assistant, Shipping & Continental Manager's Department, Victoria, as Staff Assistant, Chief Mechanical & Electrical Engineer's Department, London Bridge.

Mr. T. S. Gambrill, Staff Assistant (Operating) as Joint Staff Assistant (Operating/Commercial), Waterloo.

Mr. B. T. Wright, Staff Assistant (Commercial) as Assistant (General Purposes), Waterloo.

Mr. C. F. Voysey, as Sales Assistant (Freight), Line Traffic Manager's Office (South Eastern Division).

NEW EQUIPMENT AND PROCESSES

The illustration above, which we regret was wrongly used last week, illustrates the following item.

Cowl Extractors

ALUMINIUM cowl extractor ventilators have been specially designed for areas where complete storm protection is required. The units can be fixed to sloping sheeted or glazed roofs. Purpose-made units can be supplied for flat roofs. Steel units, with special protective treatment, can be installed on sites where aluminium is unsuitable.

Baffles and adjustable dampers are claimed to eliminate turbulance and provide unrestricted outlet. A close-fitting base, suitable for fixing on patent glazing or roof sheeting eliminates down draughts and gives full weather protection.

Adjustable dampers may be hand-operated or remotely-controlled by pneumatic, or hydraulic power.

The units are available in three sizes, for outlet areas of 4.7 sq. ft., 6.6 sq. ft. and 14 sq. ft. respectively.

Further details may be obtained from Templewood Hawksley Limited, Ventilating Division, Coleridge Chambers, 177, Corporation Street, Birmingham, 4.

Miniature Thermocouple Wire

A NEW miniature thermocouple wire with an outside diameter of only 0.5 mm. is the latest addition to the "Thermocoax" range of ceramic-packed thermocouple wires distributed in the United Kingdom by Research & Control Instruments Limited. Known as the "Thermocoax" 2AB Ac 05, it has an outer sheath of 18/8 steel and cores of "Chromel/Alumel" (Trademark, Hoskins Mfg. Co.) insulated from each other and the sheath by powdered magnesium oxide.

Temperature range is stated to be 0-900 deg. C. and an accuracy of 2.8 deg. C. up to 350 deg. C. and of 0.75 per cent from 350 deg. C. to 1,000 deg. C. is claimed together with good stability, short response time, great mechanical strength, and excellent electrical insulation. It may be bent on a radius of 1 mm.

A new 1 mm. "Thermocoax" with Inconel sheathing is also available with greater resistance to corrosion than the standard 18/8 steel sheath type.

Another innovation is a box of accessories for facilitating the correct forming of thermocouples and for protecting the couple itself against corrosion.

Automatic Conductivity Measurement

A NEW range of Philips automatic conductivity measurement equipment permitting continuous measuring recording and control of the strengths of process solutions is now being distributed in the United Kingdom by Research & Control Instruments Limited. The equipment is made in Holland by N. V. Philips Gloeilampenfabrieken.

Two methods are available: with automatic temperature compensation, or by the use of a reference cell immersed in the liquid being examined, in which case no temperature compensation is required. With single-channel recorders, a control facility is possible whereby the strength of the process liquid may be continuously controlled, in addition to being measured and recorded. Where measurement and recording only are required, multi-channel recorders monitoring up to six different points may be used.

Further details of the two preceding items can be obtained from Research & Control Instruments Limited, Instrument House, 207 King's Cross Road, W.C.1.

Automatic Safety and Vigilance Control

THE Oerlikon Safety & Vigilance Control, now manufactured under licence by Davies & Metcalfe Limited, has been designed to increase safety protection against inattention or collapse of the driver of diesel and electric locomotives or railcars, particularly of one-man vehicles. The lower illustration on this page shows the vigilance side of the apparatus, with side plates removed. The diagram facing shows the general arrangement of the system.

The control provides audible warning followed by an automatic power cut-off and brake application should the driver become inactive or incapacitated. It supplements, but is independent of, existing track-operated automatic control equipment.

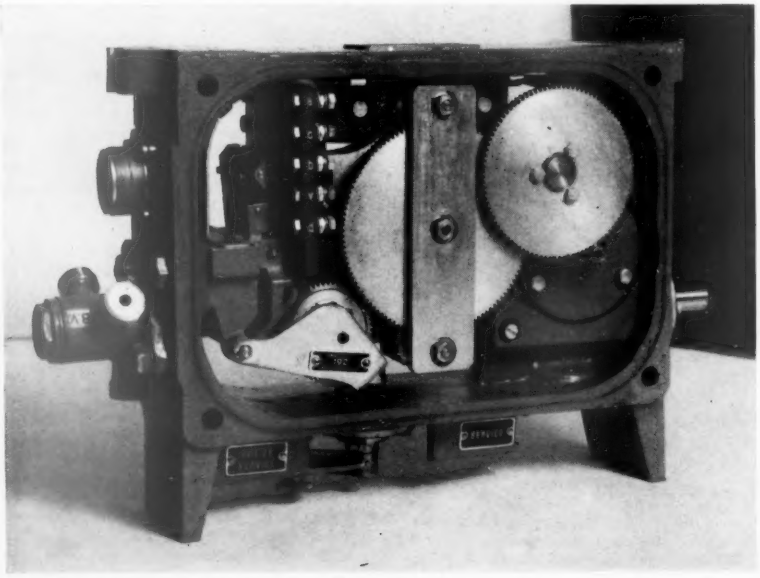
The apparatus is axle-driven and operates on distance run, irrespective of speed. Pedal action is light and positioned for maximum comfort. On standard setting, the warning sounds after one mile is travelled from previous re-set position. Cancellation and re-setting is achieved by a short release of the deadman pedal. If cancellation fails to occur before a further quarter-mile is covered, power is cut off and brakes applied. Normal manipulation of driving controls automatically re-sets the unit, a feature which ensures that no additional mental or physical fatigue is placed on the driver.

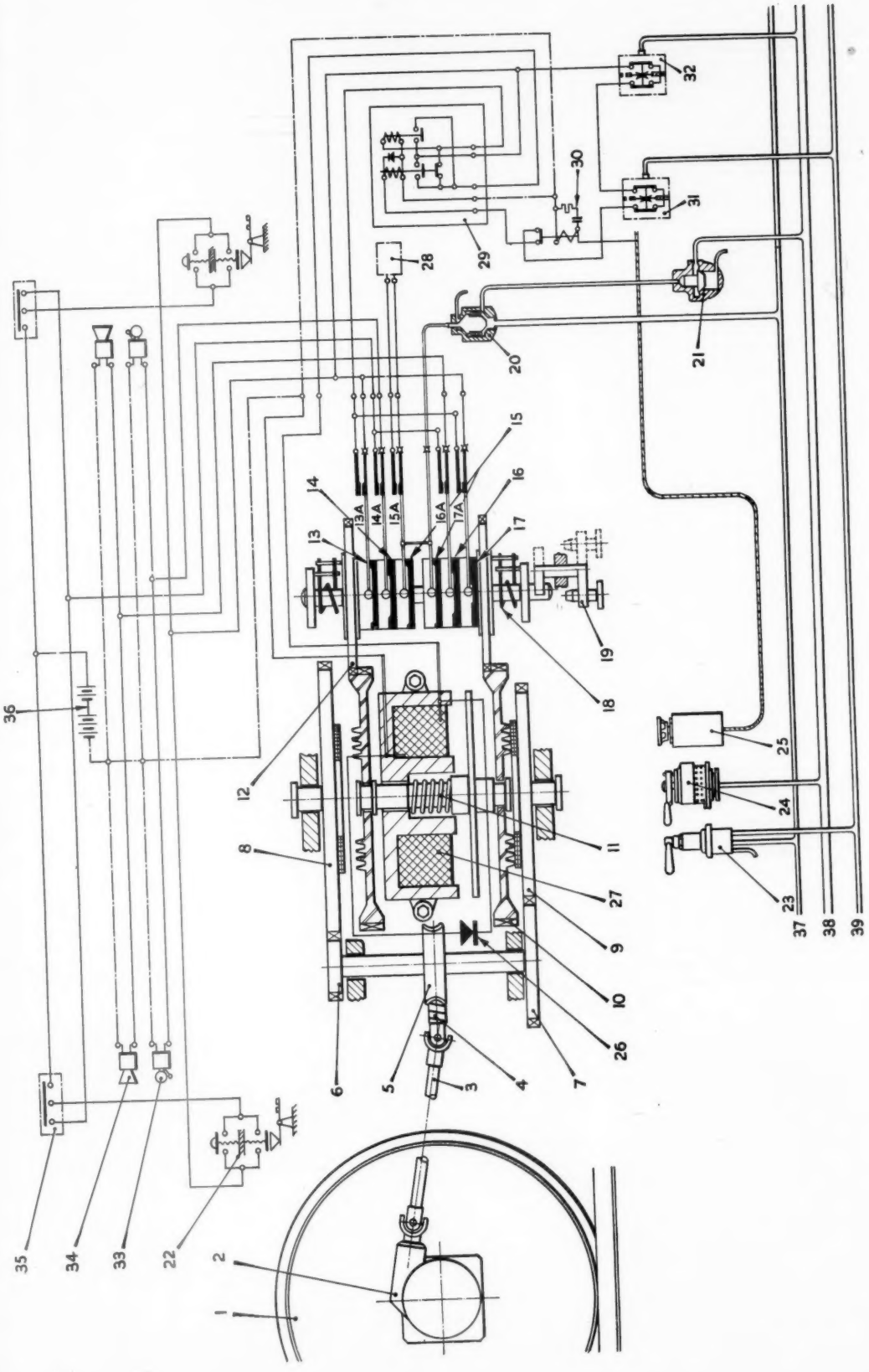
The incorporation of a pedal-operated deadman safety control, also functioning on distance run, ensures that control is inoperative on a stationary locomotive. This permits pedal release in the cab without a brake application. When the pedal is released during running, the warning bell rings after a distance of 44 yd. has been covered. If there is no cancellation, brakes are applied at 110 yd.

Drive operates from an axle-box on the locomotive through a small reduction gearbox via a telescopic cardan shaft to the drive-shaft on the safety apparatus. Here it is taken through a worm gear on two pairs of spur gears, one set having a large and the other a small ratio. These gear trains provide fast or slow drive to two friction clutches. Gear teeth cut in the clutch plates rotate the control camshaft.

When energised, a spring-loaded magnet coil mounted between the clutches engages the slow-speed drive operating the vigilance cycle. When the coil is de-energised, the spring engages the high-speed clutch operating the deadman's safety cycle. The control cam assembly is free to rotate for one revolution only on a fixed shaft. The omission of a number of teeth in the camshaft drive-gear allows the drive to slip on the over-run. When the driving clutch is released, a torsional spring returns the cams to starting position.

The cams operate contacts controlling electrical circuits and provide mechanical operation for the control valve. This indirectly actuates the brakes. Attached to the apparatus casing, it has connections to air supply, atmosphere, and inlet valve for

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automatic vacuum brakes or exhaust valve for automatic air brakes.

Actuation of the vigilance re-set mechanism either when the driver's automatic air brake control or the direct air brake control is operated is initiated by a pressure-fluctuation switch, consisting of a pressure chamber divided equally by a flexible diaphragm. A choke provides air communication between the two chambers. The diaphragm is flanked on each side by switch contacts.

The chamber on one side of the diaphragm is connected to the brake-pipe. Any pressure variations causing diaphragm movement opens a pair of switch contacts. The pressure-fluctuation switch is wired into the magnet coil circuit and operation of the brake valve causes the magnet coil to be de-energised momentarily, allowing the cam assembly to be re-set to the starting position of the vigilance cycle.

Similar re-setting action is obtained when the power controller is moved from one notch to the next by actuation of a relay with normally closed contacts. This relay is energised by closure of contacts in the controller. An electrical time delay device ensures completion of the mechanical re-set operation with the normal quick movement of the controller.

The patent Safety & Vigilance Control system has been in railway service for over ten years and is fitted to locomotives operating under all service conditions. Among the railways using this equipment may be mentioned the following : the Swiss Federal Railways; Rhodesia Railways, and the Vicicongo Railways. Orders are at present in hand for fitting the equipment to diesel-electric locomotives for the East African Railways and railcars for the Nigerian Government Railways.

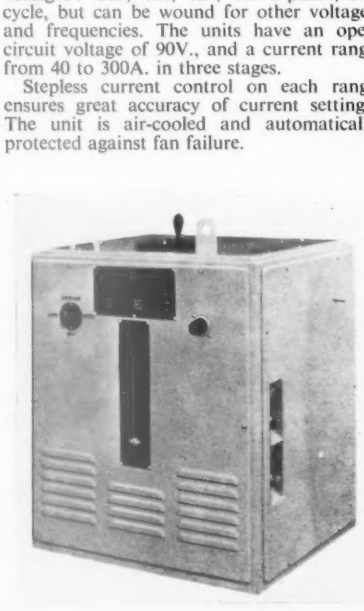
Further details can be obtained from Davies & Metcalfe Limited, Injector Works, Romiley, Cheshire.

Silicon Rectifier-Transformer

THE Arcmaker silicon rectifier-transformer for arc welding is rated at 250A. at 35V. continuously, or 300A. for intermittent use. It is claimed to have long life and to be particularly suitable for low hydrogen electrodes and the low chrome alloys.

Each unit is wound for the following voltages : 380, 400, 420, 440 3-phase, 50-cycle, but can be wound for other voltages and frequencies. The units have an open circuit voltage of 90V., and a current range from 40 to 300A. in three stages.

Stepless current control on each range ensures great accuracy of current settings. The unit is air-cooled and automatically protected against fan failure.



Further details can be obtained from the manufacturer, the Lincoln Electric Co. Ltd., Black Fen Road, Welwyn Garden City, Hertfordshire.

Shutter Door

A NEW shutter door is available which is claimed to be suitable for heavy use in transport garages and similar installations.

The door is constructed from 16G. Sherardised leaves attached to a collapsible frame by non-ferrous hingeing strips. Similar strips are used to connect the outer edges of the leaves. The door has been subjected to wind pressures equivalent to approximately 100 m.p.h. without suffering deterioration in shape or efficiency.

The doors are made to fit all sizes of openings, but even the heaviest can be handled by one man. This ease of operation results from the collapsible frame which ensures that all leaves move when the door is opened or closed.

Operation can be manual or powered. Control can be by push-button, photo-electric cell, or floor pads. All powered doors are fitted with safety devices to prevent injury to persons or damage to vehicles. The door offers a good surface for decoration.

Further details can be obtained from the manufacturer, the Bolton Gate Co. Ltd., Waterloo Street, Bolton, Lancs.

Sodium Floodlight Projector

THE R. 7780 is a new 140W. sodium floodlight projector. It is completely self-contained, for it is supplied with ballast and capacitor internally secured and wired. It projects a wide beam and is suitable for lighting buildings and large ground areas.

Lamp replacement is simple : the lamp-holder cover is removed and the lamp withdrawn without disturbing the front of the fitting.

The body is of welded sheet steel, zinc-plated and stove-enamelled bright green outside and white inside. The trunnion arm and feet are of wrought iron, galvanised. Anodised aluminium is used for the reflector and the toughened sheet glass front is sealed by a special rubber sealing strip—no glazing compounds are used.

The fitting is wired to a three-way terminal block above the cable gland with $\frac{3}{8}$-in. cable centre. The gear tray can be lowered on four captive screws for easy access to fuse and neutral link.

List price is £28 10s., complete with control gear. Further details can be obtained from the manufacturer, Philips Electrical Limited, Century House, Shaftesbury Avenue, London, W.C.2.

Welding Against Pilfering

SPOT welding of nail heads in packing cases may play a major role in cutting losses estimated at many hundreds of thousands of pounds a year in pilfering from cargoes shipped overseas.

Technicians at the Birmingham District headquarters of British Oxygen Gases Limited were asked to investigate the possibilities of these welding applications after one large Birmingham manufacturer reported large-scale pilfering of goods from packing cases shipped to African markets.

The wooden packing cases, bound with metal strips and nailed, were being opened without any apparent sign and their contents pilfered.

Welding technicians at British Oxygen Gases advised Argon spot welds to join the flat-headed nails to the binding metal strip.

Construction of Locomotives and Rolling Stock in Railway Workshops

Divergent views on policy by British and South African authorities

The British Transport Commission has made the following statement of policy in regard to the construction and repair of locomotives and rolling stock for British Railways:—

In February, 1956, the British Transport Commission announced its policy for the future of British Railways workshops. The Commission stated that the shops would, with minor exceptions, be fully employed for the next five years.

The B.T.C. has recently given careful consideration to the whole matter with the aim of establishing its policy for the future. It has concluded that the statement of principles made in 1956 still holds good and it sees no reason to depart from the general features of that policy. Since that time, however, various factors, some of them outside the Commission's control, have necessitated an acceleration of the modernisation plan and a consequential acceleration in the process of shaping workshops policy to meet the requirements of the future.

Consideration of B.T.C. Employees

In formulating its future policy, the Commission has felt bound to give overriding consideration to the interests of the railway industry itself ; to have regard to the future of its own employees; to seek the maximum economy and efficiency in manufacture and repair, and to ensure close co-operation with industry so that the maximum benefit may be obtained from its experience, resource, and enterprise. The Commission's policy for the future will be to continue to use its own workshops for the manufacture of equipment and components for which they are laid out, as well as for the repair of all equipment. This is on the proviso that costs are competitive. The Commission will continue to rely on outside industry for the supply of new diesel and electric power equipment and it may purchase complete locomotives and rolling stock from industry as its programmes require and when circumstances justify such a course.

Reduction in Workshops Capacity

The introduction of modern types of motive power and equipment must lead to a reduction in the existing fleet of steam locomotives and rolling stock and the reductions in workshop capacity of British Railways resulting from the implementation of the above policy will be carried out by phases, of which only the initial phases can be decided at this time. There will also be a reduction in the orders placed on outside industry, especially for wagon repair.

The trade unions concerned have been informed of these developments in the Commission's policy.

Committee Appointed in South Africa

The South African Minister of Transport, Mr. B. J. Schoeman, has appointed a Committee to enquire into the manufacture of South African Railways' requirements by private industry. During the last session of Parliament, the Minister gave an indication of what he had in mind in regard to the work done in Railway workshops when he said : "Having regard to the expansion that has taken place in recent years in the field of industry the Administration is at present considering to what extent manufacturing work should continue to be undertaken in departmental workshops to meet the Railways' own requirements of material and spares. Because difficulty was experienced in the past in obtaining spares peculiar to Railway requirements from private industry, considerable capital amounts have been spent on the provision of departmental manufacturing facilities, including buildings, machinery and equipment. The Administration is, however, of the opinion that the time has arrived to examine the question as to whether it would not be more advantageous economically both from the point of view of the Railways and in the national interest, to entrust private industries with some of the manufacturing work which the Railways are at present undertaking or intend undertaking in the future. It will be appreciated that such a step will have important implications."

Members of Committee

The chairman of the Committee is Mr. G. J. van Zyl, an engineer and businessman in Cape Town, and the members are Mr. G. J. F. van der Merwe, President of the Afrikaanse Handelsinstituut ; Mr. V. R. Atkinson, former President of the Federated Chambers of Industries ; Dr. R. Gaigher, Industrial Adviser, department of Commerce & Industries ; Mr. J. P. Laurens, Assistant General Manager (Finance & Planning), South African Railways ; Mr. F. Jackson, Assistant Chief Civil Engineer (Maintenance) South African Railways; Mr. N. Bestbier, Assistant Chief Mechanical Engineer (Design and Development) South African Railways, and Mr. A. J. G. Gosling, Inspecting Engineer (Electrical) (New Works) South African Railways. Mr. A. L. Weideman is Secretary.

Details of Investigation

The Committee will report to the Minister on the extent to which manufacturing work is being done or is to be undertaken in Railway workshops and maintenance depots; the buildings, machinery and equipment provided or being obtained for undertaking such work, and the economic and other advantages, both from the Administration's point of view and the national interest, to be gained from the transfer of manufacturing work to private enterprise, with due regard to the ability of private industry to undertake the work ; the extent to which departmental facilities are necessary for maintenance and repair work; and the effect the transfer of such work would have on the Railway staff establishment in the workshops and maintenance depots, and to what extent Railway assets will be affected.

Proposed Closures of Lines and Stations on L.M. Region

British Railways, London Midland Region, has under consideration for closure during 1959 certain lines and stations, particulars of which are given below. All the proposals have been submitted to the railway trades unions concerned, and are subject to confirmation by the appropriate Transport Users' Consultative Committee.

Lines to be Closed for All Traffic:

Bedford-Northampton; Bedford-Hitchin; Rugby-Wigston (Leicester) ; Derby Friargate - Egginton ; Rhydymwyn - Denbigh ; Ruthin - Corwen ; Whitchurch - Waverton ; Crossens - Preston ; Harrington - Moresby Park.

Ulverston - Lake Side ; Workington (William Pit) - Penrith (Flusco) ; Kirkby Stephen-Tebay; Kirkby Stephen-Penrith; Hooton-West Kirkby.

Stations to be Closed:

Aber, Abbey Town, Adlington (Cheshire), Alrewas, Albion, Althorpe Park, Arkholme, Armitage.

Basford Vernon, Bay Horse, Bickershaw & Abram, Blaby, Black Dyke, Borrowash, Bromley Cross, Brooksby, Brandon & Wolston, Burgh-by-Sands.

Cadishead, Calveley, Castlethorpe, Castle Ashby, Caton, Charwelton, Clayton Bridge, Codnor Park, Cross Lane.

Doe Hill, Dolgarrog, East Langton, Ellenbrook, Elmesthorpe, Entwistle, Eskmeals, Farington, Four Ashes, Frisby.

Gargrave, Garstang & Catterall, Glendon & Rushton, Great Bridge North, Gretton, Hammerwich, Haslingden, Hathern, Hawkesbury Lane, Halton (Lancs), Heaton Mersey, Helmdon, Hest Bank, Hindley Green, Hoghton, Huncoat, Hundred End.

Ince & Elton, Irchester, Kenyon Junction, Kilsby & Crick, Kirkbride, Kirkandrews, Kirkby Bentinck, Lilbourne, Linby, Long Buckby, Longton Bridge, Long Preston.

Midge Hall, Mill Hill (Lancs), Middlewood Higher, Monsal Dale, Moss Side, Napsbury, New Basford, Newstead, Normacot.

Park, Padbury, Peak Forest, Penwortham, Pilsley, Platt Bridge, Pleasington, Roade, Rowsley, Rufford, Sandycroft, Saxby, Smithy Bridge, Stretton.

Thornton in Craven, Turton & Edgworth, Verney Junction, Waverton, West Timperley, Wennington, Whalley, Wigston Magna, Wrea Green, Yelvertoft.

Passenger Services to be Withdrawn:

Bletchley-Oxford, Bletchley-Cambridge, Dunstable-Leighton Buzzard; Kettering-Cambridge, Pinxton-Kimberley.

Crewe-Wellington, Uttoxeter-Macclesfield, Blackburn-Hellifield, Chorley-Blackburn.

Amlwch - Gaerwen, Chester - Denbigh - Ruthin, Gateacre-Aintree, Ditton Junction-Broadheath, Chinley-Dore (Sheffield).

Former G.C.R. Main Line

Local services north of Aylesbury to be withdrawn. The through day express trains from Marylebone to Sheffield, Bradford, and Manchester to be withdrawn, and a reduced service provided between Marylebone and Nottingham only.

Trains between London and Nottingham would call at: Aylesbury, Brackley, Woodford, Rugby, Lutterworth, Leicester, Loughborough, Nottingham. These would be the only stations to remain open for passenger traffic on the former Great Central Railway main line north of Aylesbury.

WILD-BARFIELD ELECTRIC FURNACES LIMITED AT BRITISH TRADE FAIR, LISBON.—Wild-Barfield Electric Furnaces Limited will include among exhibits at the British Trade Fair, Lisbon, on May 29 to June 14, a 22 kW. horizontal-batch type furnace, model HW1610, which has a chamber 30 in. long with door opening 16 in. x 10 in. Apart from the automatic temperature controller, of the wall-mounting pattern, the furnace is completely self-contained and all door mechanism is enclosed. It has a maximum operating temperature of 1050° C. Also on exhibition will be a selection of standard laboratory muffles and a forced air circulation furnace designed for tempering in the toolroom.

Presentation to Mr. K. W. C. Grand

The presentation of Life Membership of the Staff Association of British Railways (Western Region) to Mr. K. W. C. Grand, formerly General Manager of the Western Region and recently appointed full-time Member of the British Transport Commission took place at a banquet following the Association's 29th Annual Meeting and Conference at Newquay last week. The same day Mr. Grand had relinquished the presidency of the Staff Association in favour of his successor as General Manager, Mr. J. R. Hammond.

Association's President for 11 Years

Mr. Grand was presented with a gold medallion, showing, on one side, the coat-of-arms of the former Great Western Railway and, on the obverse, the inscription "Staff Association, Life Member—K.W.C. Grand, 1959." Mr. S. G. Ward, Regional Establishment & Staff Officer of the Western Region and Chairman of the Association, presented to Mr. Grand, on behalf of the 40,000 members of the Association, an Atmos clock, as an expression of their regard and appreciation of his unfailing interest in the work of the Association throughout the 11 years in which he had been its president.

The clock was inscribed "Presented to K. W. C. Grand, Esq., with the affection and esteem of the members of the Western Region Staff Association, 1959." Expressions of the regard in which Mr. Grand is held by all sections and grades of staff throughout the Region were voiced on behalf of the present staff and retired members.

Staff and Labour Matters

Redundancy Fear in Rail Shops

Grounds for the fear of railway employees that there may be redundancy in the railway workshops were explained yesterday to Members of Parliament from the constituencies concerned by representatives from the workshops of railway centres. The deputation was led by Mr. A. Woodhead, of Horwich, Chairman of the Railway Joint Central Committee.

The deputation drew attention to the railway modernisation programme and urged that railway workshops should receive a fair share of the new work. This work, the deputation claimed, was slipping away to outside contractors at an alarming rate, and this opened the prospect of work ceasing altogether at a number of railway centres in the future.

N.U.R. Withdrawal from Railway Consultative Machinery

The Executive Committee of the N.U.R. has reiterated its previous decision to withdraw from the consultative machinery at all levels with effect from June 30 next.

In response to the previous notification sent to the British Transport Commission Sir Brian Robertson, Chairman of the Commission, informed the N.U.R. that the scheme of consultation formed part of the agreement which also set up the machinery of negotiation and this agreement was one document which could only be terminated by either the Commission or the unions jointly giving 12 months' previous notice in writing.

The Negotiating Committee of the N.U.R. submitted a report following receipt of Sir Brian Robertson's letter and its report has been adopted by the union's Executive Committee, which has issued instructions that all members should take no further part in consultation meetings from June 30. The report of the Negotiating Committee, as approved by the Executive Committee, is in the following terms:—

"We have given careful consideration to the letters from the Chairman of the B.T.C. dated March 20 and April 15, 1959, and note, with regret, that the adamant attitude of the B.T.C. on compulsory trade union membership remains unchanged.

"We agree with the statement made by Sir Brian Robertson in the last paragraph of his letter of March 20 that 'co-operation and fruitful consultation cannot be enforced by agreement.' There is no point, therefore, in continuing to hold productivity council and consultation meetings when this spirit of co-operation has been seriously prejudiced by the attitude of the Commission.

"In view of this position we reiterate our previous decision (which is an initial indication of our strength of feeling on the matter) and recommend that the General Secretary inform all our members at branch sectional council and all other levels that they should not attend consultation meetings after June 30, and that only business appropriate to the machinery of negotiation should be transacted."

Parliamentary Notes

Use of Abandoned Lines

Mr. J. Grimond (Orkney & Shetland—Lib.), speaking on the Scottish Road Estimates before the Scottish Grand Committee of the House of Commons on May 12, asked if there was any planning between the three services—air, rail, and road. On admittedly inadequate experience, it was his conclusion that there was not close cohesion even between the nationalised industries of airways and railways, let alone between these industries, steamers, road services, and the Government.

"When we close railway lines in Scotland," he added, "what is done with the track which is left? I know that the Government's answer is that it is no good for roads, but that view is disputed by many competent people. There is a fairly large body of opinion which thinks that some use can be made of abandoned railway lines, even if they are single tracks, though in that case it would be difficult to work with them."

Questions in Parliament

Allocation of Wagon Repair Work

Major Sir Guy Lloyd (Renfrewshire East—U.) asked the Minister of Transport & Civil Aviation on May 14, whether, in view of the present anxiety among private wagon repairing firms, he would issue a direction to the British Transport Commission as to the priority they should adopt in allocating repair work between private firms and their own shops.

Mr. Harold Watkinson, in a written answer: The allocation of wagon repair work is the responsibility of the British Transport Commission, as part of the commercial management of the railways, and is not a suitable subject for a direction. I am, nevertheless, aware of the concern felt at the present time by private wagon repairing firms as to their future; I have received a deputation from the Wagon Repairing Association and I have heard the views of a number of hon. Members who have approached me. I have accordingly discussed the matter with Sir Brian Robertson. The problem arises basically because the British Railways wagon fleet is contracting very materially and because the older wooden wagons are being scrapped. There is thus an absolute reduction in the volume of repair work and this must affect both the Commission's own shops and the private repairers.

In allocating repair work the Commission must have regard to commercial and geographical considerations as well as to the claims of its own workpeople and of the private repairing industry. The Commission has already reduced the volume of wagon repair work in its own shops, and is discussing with the Unions the effect which further contraction will have on its shops. The Commission is also meeting the Wagon Repairing Association to discuss how best the continuing contraction can be applied in its case. The Commission is, I am assured, ready to look as sympathetically as it can at any constructive proposals put forward by the Association, and I hope this consultation will continue.

Keighley and Oxenhope Line

Mr. Charles Hobson (Keighley—Lab.) asked the Minister of Transport & Civil Aviation on May 13, when he expected to receive the report of the appropriate consultative committee regarding the proposed closing of the Keighley and Oxenhope branch line railway.

Mr. G. R. H. Nugent, Parliamentary Secretary: I understand that no proposal for this line has yet been submitted to the Transport Users' Consultative Committee for the Yorkshire Area.

Mr. Hobson: Will the hon. Gentleman bear in mind that the loss on this branch is negligible, being in the region of £1,200 per annum, that economies have already been agreed between the staff which would avoid that loss, and that if this line is closed it will literally isolate parts of my constituency in heavy snowy weather?

Mr. Nugent: It is not for me to bear in mind that important information, but I am sure that the Transport Commission will take note of what the hon. Gentleman has said.

Staffordshire Branch Lines

Mr. Harold Davies (Leek—Lab.) asked the Minister of Transport & Civil Aviation on May 13, what reports he had had from the appropriate area consultative committee about the closing of branch railway lines serving Leek, Staffordshire, and whether he was aware that the proposed closure of these lines would drastically curtail Leek's transport facilities.

Mr. G. R. H. Nugent, Parliamentary Secretary: I understand that since 1956, the British Transport Commission has put no proposals to the West Midland Transport Users' Consultative Committee for the closure of railway lines serving Leek.

Mr. Davies: We are fully aware that the Leek-Churnet line is to be closed. Is the Minister aware that the very active town of Leek, with its important industries, is completely cut off by rail from Manchester, Derby, Stoke-on-Trent, and Macclesfield? Is it not time that we looked into the whole purpose of the railway system? Ought not Members on both sides of the House ask themselves: Is it to be a social service or must it all the time make a profit?

Mr. Nugent: I explained in answer to a previous question that these points are not for me to answer. I do not doubt that the British Transport Commission will take note what the hon. Gentleman has had to say.

Mr. Ernest Davies (Enfield East—Lab.): Will the hon. Gentleman give an assurance that there has been no change in the procedure, and that where it is proposed that a line shall be closed, the matter is referred to

the appropriate consultative committee? Is this not the second time to-day that he has said that he is not aware of these proposals, and that they have not been referred to the committee? Apparently there are proposals, and these closures are taking place. Has there been any change in the procedure?

Mr. Nugent: There has been no change in procedure. I do not doubt that there are many rumours when the B.T.C. is contemplating action of this kind, but neither in this case nor in the other have proposals been put to the consultative committee.

Mr. E. Popplewell (Newcastle-upon-Tyne W.—Lab.): Is the Minister aware that the Government are entirely responsible for the B.T.C. running at a loss of about £90,000,000 a year, and that it is appalling that the Commission should have to close down branch lines and stations when they are showing a slight deficiency? Will he have further consultations with his colleagues and with the Commission so that the people in the areas concerned can have a better deal than they are now having?

Mr. Nugent: I do not for a minute, accept the implications in the hon. Member's question. For one thing, but for the fact that the Government are financing the larger part of the £1,500 million modernisation scheme British Railways would not be running at all.

Rejected Closure Proposals

Sir Archer Baldwin (Leominster—C.) asked the Minister of Transport & Civil Aviation on May 13, how many closure proposals had been submitted to the Transport Users' Consultative Committees in the last two years to the most convenient date; and in how many cases the committees had given a decision against the British Transport Commission's proposals.

Mr. Watkinson, in a written answer: During 1957 and 1958, 246 closure proposals were submitted to the Transport Users' Consultative Committees. Of these, 12 were rejected, and a further 13 modified at the Committees' request.

Lessons from Slough Railway Accident

Mr. H. Watkinson, Minister of Transport & Civil Aviation, in reply to Mr. Fenner Brockway (Eton; Slough—Lab.), who asked on May 13, for a statement on the railway accident at Slough on May 1, stated:—

At 7.25 p.m. on May 1, the 1.5 p.m. express train from Pembroke Dock to Paddington was approaching Slough station at about 70 m.p.h. when one of the bogies near the middle of the train was derailed when it passed over a broken rail. The last six coaches were completely derailed about 300 yds. further on and one turned over on its side. The coupling parted between the third and fourth coaches and the front portion ran forward for another half a mile until stopped by the vacuum brake which came on automatically as a result of the parting. I am glad to say that although the train was crowded there were very few casualties—six persons were taken to hospital with minor injuries and 15 others suffered from slight cuts or shock. The injured passengers received prompt aid and the others were conveyed to Paddington in a relief train.

Inquiry into Accident

The permanent way was seriously damaged, but by 6.0 p.m. on May 3, repairs were completed. I appointed the Chief Inspecting Officer of Railways to hold an Inquiry, which he opened on Monday. His investigations are not yet complete, but his report will be published in due course.

Mr. Brockway: May I ask whether the inquiry which is taking place will be not merely into the causes of the accident, but into the causes of the very happy event of so few casualties? Is it not the case that the fact that the train was equipped with buckeye couplings prevented the coaches from being scattered and turning over? If this is the case will the Minister seek to extend throughout the whole of our railway system a device which prevents loss of life in this way?

Mr. Watkinson: My Chief Inspecting Officers of Railways have very wide terms of reference, and their reports can make recommendations to the Commission, and customarily do so. I do not think the hon. Gentleman is wrong in his estimate of what saved a great many lives. It shows how the railway modernisation plan may well save lives as well as improve the railway system.

Diesel and Steam Costs

Mr. David Griffiths (Rother Valley—Lab.) asked the Minister of Transport & Civil Aviation on May 13, what is his estimate of the comparative maintenance costs of a diesel engine and a steam engine of comparable motive power.

Mr. G. R. H. Nugent, Parliamentary Secretary, in a written answer: The British Transport Commission estimate from the limited experience of main line diesel operation so far, that the cost per engine mile of maintaining a diesel locomotive seems likely to be at least 20 per cent less than for a steam locomotive of comparable power.

Sale of Land for P.O. Site

Mr. Ellis Smith (Stoke-on-Trent—Lab.) asked the Minister of Works on May 12, what consultations he had had or proposed to have with the city of Stoke-on-Trent and British Railways about the proposed Government buildings on the Station Road site, Stoke-on-Trent; and to what extent it was intended to clear the whole site from the railway lines, lay it out in harmony with the turf layout by the city council and construct all new buildings for the Post Office in association with British Railways in accordance with modern architecture.

Mr. Hugh Molson: The local planning authority, which is already aware of the proposal to develop the Station Road site for the Post Office, will be consulted about the form of the development. British Railways, who is selling the site to the Post Office, will also be consulted so far as its interests may be affected. The site being acquired by the Post Office does not adjoin the railway lines, and the Ministry will not therefore be concerned with the general development of the area between the Post Office site and the railway. The buildings erected on this site will be of modern design.

Scrap-Metal Dump near Station

Mr. W. T. Aitken (Bury St. Edmunds—C.) asked the Minister of Housing & Local Government on May 12, if he was aware of a proposal to establish a scrap-metal dump and breakers' yard on British Railway property at Warren Hill Station, Newmarket, near the Bury road; and if British Railways has as yet applied for permission from the local planning authority.

Mr. J. R. Bevins, Parliamentary Secretary, in a written answer: I was not aware of this proposal. I am making enquiries, and will write to my hon. friend about it.

Contracts and Tenders

Diesel-electric locomotives for British Railways

The British Transport Commission has placed orders valued at over £11,000,000 for 130 main line diesel-electric locomotives and 16 power units for diesel-electric shunting locomotives. Details of the orders are as follow:—

English Electric Co. Ltd.: 55 2,000-h.p. Type "4" main-line diesel-electric locomotives, and 15 spare power units, comprising diesel engine and main generator only for 350-h.p. diesel-electric shunting locomotives.

Brush Electrical Engineering Co. Ltd.: 75 1,365-h.p. Type "2" main-line diesel-electric locomotives.

General Electric Co., Ltd.: 1 spare power unit, comprising diesel engine and main generator only for a 350-h.p. diesel-electric shunting locomotives.

Both types of main line locomotives, although varying in hauling capacity, will have a maximum speed of 90 m.p.h. The locomotives will be allocated on delivery, beginning in December this year and continuing until the end of 1960.

British Railways, Scottish Region, has placed the following contracts:

Wayne Tank & Pump Co. Ltd: provision of diesel fuelling equipment, Ayr

Wm. Govan & Sons Ltd.: pits, extensions to shed and stores accommodation for diesel maintenance facilities, Ayr

James Miller & Partners, Ltd.: demolition of tunnel and construction of two new bridges, Wallyford, East Lothian

Hillhouse Quarry Co. Ltd.: repairs to roadways, Barassie Workshops

Taylor & Hubbard Limited: provision of two diesel electric rail travelling cranes, Dyce and Irvine

Enfield Cables Limited: supply, termination, through jointing, and commissioning of telecommunications cables, Millerhill Marshalling Yard

Murdoch Mackensie Limited: platforms, conveyor foundations, roadways, loading bank, and so on, Sighthill new goods depot, Glasgow

James Miller & Partners Ltd.: reconstruction of six overbridges between Dumbarton and Balloch.

British Railways, North Eastern Region, has placed the following contracts:—

British Thomson-Houston Co. Ltd.: supply and delivery of test equipment for diesels, Darlington Loco. Works

Brims & Co. Ltd.: painting steel sheet piling, Newport Marshalling Yard

Glew Bros.: W.C.s and septic tank. Midland Cottages, Old Royston

Tarslag Limited: concrete raft and road works, Pelaw

H. Bingham & Sons Ltd.; lubricating oil dispensing facilities, Hull Botanic Gardens M.P.D.

The Special Register Information Service, Export Services Branch, Board of Trade, has received calls for tenders as follow:—

From Formosa:

130 m. of steel crane rails

15 lightning arrestors, station type, single pole, 145 kV.

1 storage battery with accessories and spares

6 sets of coupling capacitors

1 tank-type vacuum cleaner with accessories, 115 V. 60 cycles

1 hand-type vacuum cleaner 115 V. 60 cycles

1 wheeled type CO_2 fire extinguisher

1 CO_2 fire extinguishing installation for oil handling room

48 driving wheel tyres

48 steering wheel tyres.

The Issuing Authority and address to which bids should be sent is the Central Trust of China, Purchasing Department, 68, Yen Ping Nan Road, Taipei, Taiwan

(Formosa). The tender No. is US-575. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to other countries. The closing date is, June 9, 1959. The Board of Trade reference is ESB/11505/59/ICA.

From India :

300,000 standard reversible M.S. gibs for C.I. sleepers to ex. E.I.R. C.E.'s drg. No. B/369/35, and I.R.S.S. No. T.8/50 with Corri No. 1 of April, 1958

300,000 M.S. cotter liners 3/16 in. thick for D.O. plate sleepers to N.Rly. H.Q.E. sketch No. 181, and specification T.8.50 with Corri No. 1 of April, 1958.

The Issuing Authority is the Director General of Supplies & Disposals. The tender No. is WP1/18541-K/IV. Bids should be sent to the Director General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is May 29, 1959. The Board of Trade reference is ESB/11724/59.

From Pakistan :

50 safety valve assemblies " Ross Pop " type for all classes, to part No. SDA-5, on C.E.'s drawing No. E 11939/43/(2).

The Issuing Authority is the Chief Controller of Stores, North Western Railway. The tender No. is 210-S/O/SD/P.I.L.-59. Bids should be sent to the Chief Controller of Stores, North Western Railway Office, Lahore. The closing date is June 3, 1959. Local representation is essential. The Board of Trade reference is ESB/11648/59.

Further details regarding the above tender, together with photo-copies of tender documents, can be obtained from the Branch (Lacon House, Theobolds Road, W.C.1).

The Railway Division, Ministry of Railways & Communications, Government of Pakistan, Karachi, has invited tenders for the construction of the new railway bridge over the Rohri Channel of the River Indus near Sukkur. The bridge has been designed by Dr. D. B. Steinman of New York and is scheduled for completion by the middle of 1961. It will have a steel trussed arch with a 806-ft. 9-in. span between end pins of the bottom rib providing a clear waterway of 790 ft. between abutments. The rise of the bottom rib is 180 ft. and the distance between the ribs at the crown is 24 ft., making the total height of the structure 204 ft.

B.I.C.C. MIDDLESBROUGH BRANCH NEW TELEPHONE NUMBER.—As and from May 23, British Insulated Callender's Cables Limited, Middlesbrough Branch, telephone number will be changed to : Middlesbrough 3974-5.

FIRTH CLEVELAND GROUP AT BRITISH TRADE FAIR, LISBON.—At the British Trade Fair, Lisbon, on May 29-June 14, the Firth Cleveland Group stand will exhibit direct reading electric, electronic, and hydrostatic tank contents gauges, self-priming centrifugal diaphragm and plunger pumps, Fircleve cold rolled steel strip and cold rolled hardened and tempered steel strip, the Landmaster, L.150, rotary cultivator, sections of Maxweld steel fabric for concrete reinforcement and precision welded screen cloth for mine and quarry plant, Nyloc self-locking nuts, Fram oil filters, and Surform handcutting tools. A further exhibit will include Startall engine starting equipment, and Stenor brake and clutch lining riveting machines.

Notes and News

Blockage on the East Coast Main Line.—The East Coast main line was blocked for some five hours about three miles north of Durham, British Railways, North Eastern Region, on May 14, after a parcels train ran into some stationary freight wagons. The driver of the parcels train was taken to hospital with burns. No one else was injured.

Rationalisation of Birfield Group Foundries.—The Board of Birfield Industries Limited has announced that action is being taken in accordance with plans to rationalise the group's foundry interests. These plans will mean that special plant and equipment of The Phosphor Bronze Co. Ltd., at Bradford Street, Birmingham, will be transferred to other locations within the Birfield Group. The new move will not mean any break in the continuity of work on existing contracts, and customers are being advised of detailed arrangements for their future requirements as soon as possible.

Agency Agreement for Barnsley and Goliath Cranes.—George Cohen, Sons & Co. Ltd. has been appointed by John Barnsley & Sons Limited of Netherton, Worcestershire, as sole agents in Scotland, Ireland, and South Wales for the Barnsley range of electric overhead travelling and Goliath cranes. As a result of this agreement, the lifting and mechanical handling department of George Cohen is now able to extend its comprehensive range of light and medium capacity cranes into the heavy duty category with overhead and Goliath cranes of up to 60-ton capacity and exceeding 100 ft. in span.

Port Developments at Hull.—New port facilities at Hull, consisting of a wholly reconstructed Riverside Quay and major developments along the south side of the adjacent Albert Dock, were formally opened last week by the Princess Royal. The new reinforced concrete quay replaces one of wood destroyed by enemy action in 1941. It is 1,065 ft. long and equipped with nine electric cranes which serve three 280 ft. by 82 ft. transit sheds. On the Albert Dock side four similar sheds have been constructed, the electric cranes including one of 10 tons capacity on a quay 1,513 ft. long. The total cost was £1,750,000.

Birfield Tools Limited to Sell Machines.—An agreement between Birfield Tools Limited and the Hofmann Organisation of Western Germany, embracing Gebrüder Hofmann K. G., Darmstadt, and Maschinenfabrik Dionys Hofmann, Onstmettingen/Württemberg, makes Birfield Tools Limited the sole licensees in Great Britain for the sale, installation, and servicing of the German range of machine tool balancing machines and vibration recorders. An exception is a series of wheel balancing machines which are already being manufactured under licence in this country by the Garage Equipment Division of Laycock Engineering Limited, another Birfield Group company.

British Electrical Power Convention.—The eleventh British Electrical Power Convention will be held at Torquay, June 1-5. The President of the Convention will be Mr. C. R. King, Deputy Chairman, Central Electricity Generating Board. The theme for this year will be " Electricity and its Contribution to the Standard of Living," and the following Papers will be presented :—" Progress on the First Nuclear Power Stations—Bradwell, Berkeley, Hinkley Point and Hunterston," by Messrs. F. H. S. Brown, Member, Central Electricity Generating Board, and J. Henderson, Chief Engineer, South of Scotland Electricity Board; " Priority No. 1," by Mr. A. N. Irens, Chairman, South Western Electricity Board; " The Scope of Installation Engineering," by Mr. C. C. Hyams, President, Electrical Contractors, & Allied Associations ; " National Inspection Council for Electrical Installation Contracting—Its Objects and Organisation," by Mr. E. J. Sutton, Chief Technical Officer, National Inspection Council for Electrical Installation Contracting and " Lighting and the Common Weal," by Mr. O. W. Humphreys, Director, Research Laboratories, General Electric Co., Ltd. An electrical exhibition will be held on the car park at North Quay, as part of the Convention. The exhibits will comprise mostly domestic appliances, but electric cables will be featured on the stands of British Insulated Callendar's Cables Limited ; W. T. Henley's Telegraph Works Co. Ltd., and Wandleside Cable Works Limited.

Whitsun Holiday Traffic in the Western Region.—British Railways, Western Region, ran 200 additional long distance passenger trains during the Whitsun Holiday Weekend, from May 15, to May 19, inclusive. These were run principally between Paddington and South Wales, the West of England and the Midlands. Traffic was heaviest on May 15, and Whit Monday, May 18, on each of which days some 60 special expresses were run. A number of alterations were made to the normal advertised services during the weekend including the cancellation of certain trains, particularly on Whit Sunday and the morning of Whit Monday.

Rolls-Royce Limited.—The profit by Rolls-Royce Limited for 1958 was £4,606,980, less tax £2,520,000, leaving £2,086,980 compared with £2,320,334, the previous year. A final dividend of 15 per cent is recommended making a total of 20 per cent. An extraordinary general meeting will follow the annual general meeting on July 14, to seek approval for increasing the authorised capital from £20,000,000 to £25,000,000 and for the issue of 9,290,000 ordinary shares of £1 each and 1,282,172 workers' (1955) shares of 10s. each, credited as fully paid in capitalisation of premiums on shares arising from the issues made in 1956 and 1957.

British Railways Holiday Game for Children.—" Progress Chasing," the summer holiday competition for boys and girls, will be run again this year by the Great Eastern Line, Eastern Region, from July 19 until September 19. The children taking part will be given a special progress chaser's badge and identity card, and will travel at reduced rates, recording all the new equipment and modernisation work which they observe on their holiday journeys. Prizes will be awarded to the winners. Thousands of children took part in the competition when it was held last year. Full details are not yet available.

New British Standard for Wheel Pairs for Locomotives and Rolling Stock.—The British Standard for railway wheel pairs is to be in five parts of which two are available now. B.S. 3117, Part 4, Gibson ring type fastening, gives dimensions of the Gibson ring tyre fastening identical with those in Railway Clearing House Standard No. 7, and requirements are specified for the material. B.S. 3117, Part 5, machining and assembly, specifies detailed requirements for the machining, assembly and balancing, of wheel pairs for locomotives and for rolling stock. Driven and coupled wheels fitted with crankpins are excluded. Approved alternatives for processes have been provided for, so enabling any particular workshop equipment to be used. Copies, price 3s. each, may be obtained from the British

Standards Institution, 2, Park Street, London, W.1. Parts 1, 2, and 3 of B.S. 3117 will deal with axles, wheel centres and monobloc wheels, and with tyres, respectively.

North British Locomotive Co. Ltd. Results.—The consolidated accounts of the North British Locomotive Co. Ltd. show a loss on trading for 1958 of £809,368, to which must be added £100,000 to cover special provisions. After making adjustments for taxation and dividends received from subsidiaries, the net loss by the company is £911,827. The losses are arrived at after writing down the value of stocks for the production of steam locomotives. Our issue of April 17 records the new financial arrangements of the North British Locomotive Co. Ltd. to support a £14,000,000 order book.

Scenic Rail Journey for Cruise Passengers.—British Railways, Scottish Region, made special facilities for passengers disembarking from the ms. *Meteor* at Oban on May 13. An observation car was attached to the 4.45 p.m. train from Oban to Edinburgh to enable the tourists returning from a spring cruise of the Western Isles, under the auspices of the National Trust for Scotland, to view the scenery in comfort. In addition a restaurant car was specially provided.

Montreal Locomotive Works Limited Results.—The net profit for the first quarter of 1959 by Montreal Locomotive Works Limited, was $428,000, or 61 cents a share, against $484,000 or 69 cents in the same quarter of 1958. The reduction in earnings was caused by slight production difficulties. Mr. Perry T. Egbert, the Chairman, states that a $24,000,000 order back log, with a good level of incoming orders, assures the company of a high output in 1959. Locomotives will continue to play a substantial part in the business.

Churchill Machine Tool Co. Ltd.—The 1958 dividend of the Churchill Machine Tool Co. Ltd., at 25 per cent, compares with 27½ per cent for 1957. Net profit was virtually unchanged at £344,262. Against current assets of £2,974,596 (£2,923,905) there are liabilities of £591,118 (£651,250). Stock and work in progress have been reduced from £516,900 to £395,200. The directors report that the stimulus for capital investment provided by the Budget should further the present trend towards an increased volume of orders. The meeting is at Broadheath on May 25.

Taylor Woodrow Limited.—In the report of Taylor Woodrow Limited, Mr. Frank Taylor, the chairman, states that the turnover, in 1958, increased by 20 per cent to £27,000,000, and that the firm now has a larger-than-ever volume of work in hand. Profits for the year after taxation at the reduced rate were £573,761, compared with £525,062 for the previous year, and the dividend is increased from the equivalent of 13½ per cent to 17½ per cent on the capital enlarged by one-for-two scrip issue during the year. The meeting will be held on May 29 on London.

Oil Storage at Thames Haven.—The largest independent oil reservoir in Europe, at Thames Haven, Essex, was visited on May 19. In 1948, after the disbandment of the Petroleum Board, London & Thames Haven Oil Wharves Limited entered an agreement with the Shell Refinery Co. Ltd. for storage of crude oil and finished products for the adjoining Shell Haven Refinery. The present installation has seven deep-water jetties and six coaster and barge berths. Modern equipment, including electrically-operated boom structures, high-capacity hose-handling apparatus and pipelines, with a capacity of 3,500 tons per hr., enable tankers to be loaded or discharged in 24 hrs. regardless of tides. Four miles of railway serve the Thames Haven installation, and an average of 75 wagons a day, amounting to some 1,000 tons or 250,000 gal. are dispatched by rail.

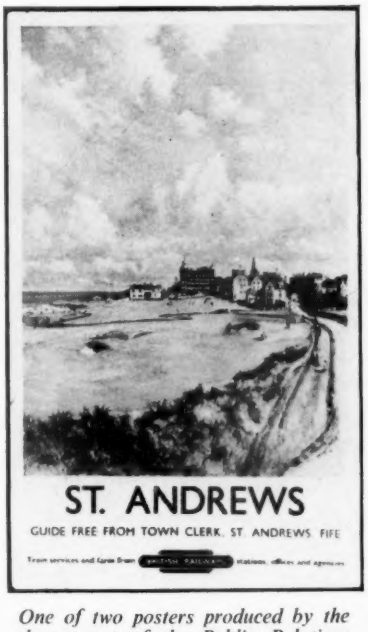
Laurence Scott & Electromotors Limited.—The net profit of Laurence Scott & Electromotors Limited for 1958, was £388,736 (£395,044), the dividend 15 per cent as before, and there is a one-for-one scrip issue. The meeting is at Norwich on May 27.

Pressed Steel Co. Ltd.—Prospects for the future of the Pressed Steel Co. Ltd. are encouraging. Mr. Alex. Abel Smith the Chairman reporting this, also states that he cannot over emphasise the importance of cost stability to prevent a revival of destructive inflatory forces.

Craven Bros. (Manchester) Limited.—Trading conditions in 1958 were very difficult and deliveries exceeded the intake of new orders, reports Mr. J. Lauchlan, the Managing Director, but the company had a satisfactory order book at the end of the year. The nett profit for 1958 is £126,111 (£114,958), and dividend 10 per cent (7½ per cent).

Pneumatics & Hydraulics Exhibition.—A new exhibition, The Pneumatics & Hydraulics for Industry Exhibition and Convention, will be held in the Alexandra Palace, London, on October 12-16, 1959. Organised by Macfarlane Watson Limited, 36, Beauchamp Place, London, S.W.3 (telephone : Ken. 2857 & 1364), it will include, for the first time since the closure of the British Industries Fair, facilities for outside demonstrations of equipment incorporating pneumatics and hydraulics. Speakers from the United Kingdom, the Continent and the U.S.A. will discuss the latest developments relating to their particular industries. A further feature of the Convention will be the inaugural meeting of The Fluid Power Association.

Scottish Region Holiday Resort Posters.—Two holiday resort posters have been produced by the Public Relations & Publicity Officer of British Railways, Scottish Region, in collaboration with the town councils of Ayr and St. Andrews. The design for the poster of Ayr is by Laurence Fish. J. McIntosh Patrick, R.S.A., R.O.I., was the artist for the St. Andrews poster reproduced in the accompanying illustration. The 17th green (" The Road Hole "), the fairway to the 18th, and the R. & A. Clubhouse, are amongst familiar landmarks of St. Andrews depicted. The printing of both posters by photo-litho was by Stafford & Co. Ltd., Netherfield, Nottingham.



One of two posters produced by the department of the Public Relations & Publicity Officer, Scottish Region

B.E.T. Omnibus Services Limited.—Results for the year ended March 31, 1959, by B.E.T. Omnibus Services Limited show a profit before taxation of £788,741 (£808,729) and a net profit of £446,297 (£451,647). The directors' recommendations for dividend payments include 11 per cent, on account of which 3½ per cent already has been paid, on the ordinary stock, free of income tax.

Reduced Couchette Berth Supplements in France.—The current sterling price of supplements for the occupation of couchette berths on French National Railways is 19s. (instead of 21s. as applied up to April 30), in 2nd class for night journeys of less than 700 km. in France or for international night journeys except those to Italy via Modane. In 1st class, and for all other night journeys in 2nd class, the supplement is 25s. (instead of 27s.).

Trips to French Coast by British Railways Vessel.—The first of the six- and nine-day cruises by ss. *Duke of Lancaster* of British Railways, London Midland Region, to the Dutch, Belgian and French coasts, on May 30, already has attracted some 250 bookings. The vessel is one of those which normally serve the Heysham/Belfast route and it has additional refinements for the limited accommodation of 300 passengers. Other cruises on June 6 and 17 also are nearly booked to capacity.

John I. Thornycroft & Co. Ltd. Interim Dividend.—For the financial year ending July 31, 1959, John I. Thornycroft & Co. Ltd. will pay interim dividends of 3 per cent on the cumulative preference shares and 3¾ per cent on the participating preferred ordinary shares, both less income tax. There will be no interim dividend on the ordinary shares. Although Transport Equipment (Thornycroft) Limited is operating at a loss with reduced turnover and increased costs, the Southampton shipbuilding, engineering, and ship repairing work is reported to continue showing good results.

Scottish Region Rail Facilities for Motorists in the Highlands.—Motorists travelling to and from Mallaig and the Western Isles can avoid driving over the difficult road between Fort William and Mallaig, by travelling by British Railways, Scottish Region, at the special inclusive rate for conveyance of car and driver by rail between these points for 65s. a single journey. Car conveyance facilities within Scotland also are available between Glasgow or Edinburgh and Aberdeen, Inverness, Oban, Thurso or Wick, and between Edinburgh and Stranraer. Facilities between Scotland and England have been extended to include Glasgow Queen Street, and are available to and from Bury St. Edmunds, Cambridge, Colchester, Darlington, Hull, Ipswich, Leeds, Norwich, Lincoln, Grantham, Peterborough, Sheffield, Doncaster, York, and Newcastle.

B.I.C.C. at the British Electrical Power Convention Exhibition.—British Insulated Callender's Cables Limited will be showing a selection of its products on stand No. 18 at the British Electrical Power Convention Exhibition in North Quay Car Park, Torquay, from June 1 to 5, 1959. A display of power cables and accessories will include

a demonstration of compression jointing on copper conductor plastic power cables utilising the B.I.C.C. compression tool. This tool, although having a 6-ton capacity, weighs only 6 lb., and thus is easily transportable. Compression jointing, when used in conjunction with cold pouring compound, is particularly suitable in areas where there would otherwise be danger of combustion. Additional items include a selection of low, medium, and high voltage cables with emphasis on oil-filled and 33-kV. mass-impregnated non-draining types.

Sheffield Twist Drill & Steel Co. Ltd.—The final dividend of the Sheffield Twist Drill & Steel Co. Ltd. is 12½ per cent, payable on July 9, making 18¾ per cent on the capital as increased by a two-for-one scrip issue (against 66⅔ per cent on the old capital). Group net profits declined to £206,336 from £312,646.

Emu Bay Railway Co. Ltd., Tasmania.—In the report to shareholders of the Emu Bay Railway Co. Ltd. it is stated that for 1958 the company has been able to pay the current year's interest on 4½ per cent and 5 per cent debenture stocks, with exchange, and carry forward £246 in the profit and loss account. A change from steam to diesel traction for the reduction of operating costs, is considered by the directors to be the only possible method of effecting an improvement in net revenue.

Fares Increase Proposals Revised.—The British Transport Commission has submitted new proposals to the Transport Tribunal on railway season ticket rates, reducing the increase it originally asked for by one-half, requested in the tribunal's interim report issued last week. Examples of the new rates are £3 0s. 6d. as opposed to £3 6s. asked for, for a monthly 10 miles season ticket, at present costing £2 15s.; £4 15s. 6d. as opposed to £5 6s. for a monthly 20-miles season ticket, at present costing £4 5s.; and £6 3s. as opposed to £7 2s. 3d. for a monthly 30 miles season ticket, at present costing £5 3s. 9d.

New Agents for Polypenco Industrial Plastics. Polypenco Limited, of Welwyn Garden City, has appointed The Norman Wrigley Co. Ltd., 366 Stretford Road, Manchester 15, as agent to handle engineering industrial plastics business in the North West of England, and Durward Clarkson & Co. Ltd., 137A St. Vincent Street, Glasgow, C.2, as agent for Scotland.

Lancashire Dynamo Holdings Limited Results.—A final dividend at the rate of 7 per cent on the ordinary stock is recommended by the directors of Lancashire Dynamo Holdings Limited, making a total of 11 per cent, less income tax, for the year ended December 31, 1958. In addition the Board recommends a special bonus interim dividend for 1959 of 1½ per cent. The net profit of the group for the year, before taxation, amounts to £836,466 (1957—£746,565). The Board also proposes to recommend the issue of 726,317 ordinary shares of £1 each, fully paid, by way of capitalisation of reserves on the basis of one new ordinary share for each £3 ordinary stock held.

Dunlop Profits Increase.—The Dunlop Rubber Co. Ltd. group trading balance for 1958 is £19,761,000, slightly lower than in the previous year, but the available net profit after tax is £550,000 up at £3,567,000. The directors recommend a final dividend of 1s. 2½d. a 10s. stock unit, making a total dividend of 1s. 7½d. Also they propose to increase the authorised capital from £40,000,000 to £50,000,000 and to capitalise £5,241,440 of reserves. This amount will be applied in a 1 for 4 issue to ordinary stockholders.

British Railways Whitsun Passenger Traffic.—British Railways carried 457,463 passengers from the London termini in 1,527 long-distance trains on Friday, Saturday, and Whit Monday, or over 48,000 more passengers than on the corresponding days at Whitsun, 1958.

Superheater Co. Ltd. 1958 Results.—The trading balance of the Superheater Co. Ltd. at £823,378 for 1958, shows a considerable increase on the previous year's figure of £645,651, but other income at £27,536 is slightly less. Total net earnings after taxation, are £408,742. The directors propose a second and final dividend on the ordinary and "A" ordinary shares of 10½d. a share, plus a bonus of 1d. a share, making a total of 1s. 3d. They report a slight falling off in orders received in the last few months, particularly in the Locomotive Division of the company.

Forthcoming Meetings

May 23 (*Sat.*).—Permanent Way Institution, East Anglia Section. Visit to modernisation work at Barking.

June 4 (*Thu.*).—Model Railway Club, at Caxton Hall, Westminster, S.W.1, at 7.45 p.m. "Notes on the construction of railway models," a talk by Mr. R. S. Garlick.

June 5 (*Fri.*).—The Railway Club, at the Royal Scottish Corporation, Fetter Lane, London, E.C.4, at 7 p.m. Paper on "The History of the Railway Club," by Mr. B. D. J. Walsh.

June 6 (*Sat.*) to June 11 (*Thu.*).—Permanent Way Institution. 75th Anniversary Convention in London.

June 16 (*Tue.*) to June 25 (*Thu.*).—Institute of Transport. Continental visit to Denmark.

June 17 (*Wed.*).—Institution of Civil Engineers, at Great George Street, Westminster, S.W.1. Conversazione.

Railway Stock Market

Buoyant conditions have continued in stock markets with the emphasis again on industrial shares which were stimulated by news of higher dividends and the belief that company results generally will continue to show a trend to somewhat higher dividends because of the reduction in the standard rate of income tax. The trade figures for April also helped sentiment, and the improved steel production for the past month was regarded as an encouraging pointer that industrial activity at home is responding to the stimulus provided by the tax cuts in the Budget.

With industrial shares still monopolising attention in stock markets, there was only moderate activity in foreign rails, which, however, have been generally quite well maintained at the time of writing. Antofagasta ordinary changed hands around 12¾, which compares with extreme levels this year of 15½ and 11½, while the preference stock was 24¾, the 5 per cent (Bolivia) debentures 85½ and the 4 per cent perpetual debentures 36. Chilean Northern first debentures were 57½ and Costa Rica ordinary stock 13½. Brazil Railway bonds kept at 5½, International of Central America common shares were quoted at $24½, and in other directions, Paraguay Central prior debentures were 11. Guayaquil & Quito assented bonds were 8⅔ and Paraguay Central prior debentures 11.

Mexican Central "A" bearer debentures were less firm at 58½, United of Havana second income stock remained at 6, while San Paulo Railway 3s. units were again around 1s. 6d.

Canadian Pacifics have receded slightly to $52¼, the 4 per cent debentures were 84 and 4 per cent debentures 65. White Pass shares have changed hands around $14¼. Algoma Central Hudson Bay changed hands at 7½ and Calgary & Edmonton 4 per cent debentures around 63.

Elsewhere, Nyasaland Railways shares remained at 13s. 9d. West of India Portuguese capital stock kept at 105½ and the 5 per cent debentures at 91½. Barsi ordinary stock was quoted at 24s.

Among shares of locomotive builders and engineers Beyer Peacock 5s. shares lost ground at 7s. 3d., Charles Roberts 5s. shares have been firm at 12s. 1½d., Westinghouse Brake were firm, too, at 43s. 6d., while Gloucester Wagon 10s. shares were 17s. 9d., following the offer made by the company to take-over Sheffield Steel Products on the basis of 12s. 6d. per 5s. unit.

Wagon Repairs 5s. shares changed hands at slightly over 9s. 9d. Birmingham Wagon held firm at 20s. 7½d. and there has been a sharp advance to 12s. 3d. in North British Locomotive at the time of writing. In other directions a feature at the time of writing has been continued demand for Ruston & Hornsby, which have risen to 31s. 7½d. a new high for the year; the year's lowest was 23s. 7½d. Power Gas Corporation 10s. shares have been good at 52s. but the recent strong advance in Stone-Platt Industries was followed by profit-taking which put the price back to 51s. 3d. Guest Keen were prominent with a sharp advance to 62s. 7½d. on further consideration of the results and raising of the dividend to 13 per cent. Pollard Bearing 4s. shares were 24s. 3d. and Ransomes and Marles 5s. shares were higher at 18s. 3d. G. D. Peters remained at 25s., Tube Investments strengthened to 86s. Renold Chain were 46s. 3d., but B.I. Cables at 55s. 3d. lost a few pence of their recent good rise which followed the financial results. Associated Electrical were 60s. 3d., English Electric 64s. 9d. and General Electric 32s. 3d. Crompton Parkinson 5s. shares at 14s. have also been quite well maintained at the time of writing. Johnson & Phillips were 28s. and Enfield Cables 20s. Dowty Group 10s. shares have changed hands around 40s. and Pressed Steel 5s. shares were strong at 28s. Steel shares have moved higher under the lead of John Summers which responded to the decision to make a 50 per cent scrip issue. It is being suggested in the City that there may be scrip issues by other steel companies to bring capital more into relation to the value of assets.

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